Mission: To protect and improve the health of people in Washington State by providing leadership, education, and technical expertise that support national, state, local, and community efforts to control tuberculosis (TB).

Goal: Protect the people of Washington from TB and improve the health of those who have TB.

Sherry Carlson, MPH, MCHES
TB Program Manager/TB Controller (acting) Operations Coordinator (2007)

Lana Kay Tyer, MSN, RN
TB Nurse Consultant (2015)

Shawn McBrien, MPH
TB Epidemiologist (2012)

Heidi Iyall, BS
Communications Outreach Consultant (2014)

Justina Novak
Process Improvement Coordinator (2011)

Scott Lindquist, MD, MPH
TB Medical Consultant (2006)

Shannon Franks
TB Education/Outreach Coordinator (2013)
Acronyms and Abbreviations Used in this Report

AFB Acid-fast bacilli
ARPE Aggregate Report for Program Evaluation
BACTEC A lab instrument brand name
CDC Centers for Disease Control and Prevention
CITC/UCSF Curry International Tuberculosis Center/University of California San Francisco
DM Diabetes Mellitus
DOH Washington State Department of Health
DST Drug Susceptibility Testing
ECHO® Extension for Community Healthcare Outcomes
EDN Electronic Disease Notification
EpiX CDC alert system for disease events
ETN Education and Training Network
FNTC Firland Northwest Tuberculosis Center
GIMS Genotyping Information Management System
HIV Human Immunodeficiency Virus
IDRI Infectious Disease Research Institute
IUATLD International Union Against Tuberculosis and Lung Disease
LHJ Local Health Jurisdiction
LIMS Laboratory Information Management System
LJ slants Lowenstein-Jensen slants
MAC M. avium complex
MGIT Mycobacteria Growth Indicator Tube
MTBC M. tuberculosis complex
NAAT Nucleic-Acid Amplification Test
NTCA National TB Controllers Association
NTIP National Tuberculosis Indicator Project
NTNC National TB Nurse Coalition
PCR Polymerase Chain Reaction
PEN Program Evaluation Network
PHIMS Public Health Issue Management System
PHRED Public Health Reporting Electronic Data
RVCT Report of Verified Case of Tuberculosis
SFT Secure File Transfer
TB Tuberculosis
TST Tuberculin Skin Test
U.S. United States
WA Washington
WAPHL Washington Public Health Laboratories
WDLS Washington Disease Reporting System
WTBD World Tuberculosis Day
The Washington State Department of Health (DOH) TB Program receives funding from the Centers for Disease Control and Prevention (CDC) for TB prevention and control efforts. The Tuberculosis Elimination and Laboratory Cooperative Agreement Grant was submitted in August 2016. CDC reviewers provided positive feedback on the application and recommended Washington’s request for funding be approved in the amount of $1,512,880 for fiscal year 2017.

Of the total state and federal (Core TB Prevention and Control) funding received by the DOH TB Program in 2016, 54.9% was passed through to Local Health Jurisdiction (LHJ) TB Programs. A simple formula is used to determine LHJ funding. The formula assesses the average number of cases over the past 5 years for all LHJs. If the LHJ averages over 5 cases a year, and has an average case rate of over 2.0, than the LHJ receives funding.

The amount of funding allocated to each eligible LHJ is based on the amount of dedicated funding available and the average number of cases the LHJ had over the previous 5-year period. In 2016 dedicated funding was provided to the following counties: King, Snohomish, Pierce, Thurston, and Yakima.

In addition to funding LHJs that meet the requirements of the formula, a contingency fund is generally set aside by the program for unexpected situations that arise to support LHJs in need. Examples of these situations include large contact investigations or providing patients with housing or other necessities. In 2016 several LHJs reached out for assistance with particular unexpected situations and DOH was able to accommodate their requests. DOH also provides funds for medications to treat TB disease and to coordinate TB ECHO®.

The remaining funds are used by the DOH TB Program to coordinate:
- Reporting and surveillance activities.
- TB training and education opportunities.
- Laboratory and genotyping services.
- Quality assurance and improvement projects.
- Capacity building and technical assistance.
- And additional projects as needed.
Reporting data to the CDC is essential to eliminating TB. This data provides guidance for programs in setting priorities and documenting the impact of interventions. The following data elements are required to report to the CDC as part of the Tuberculosis and Laboratory Cooperative Agreement (grant):

- Report of Verified Case of Tuberculosis (RVCT): Data reports are submitted to the CDC weekly, including case counts, via PHIMS (now WDRS).
- Aggregate Report of Program Evaluation (ARPE): Data reports are submitted to the CDC annually, including evaluation of contact investigation activities.

Public Health Issue Management System (PHIMS) / Washington Disease Reporting System (WDRS)
In 2016 DOH began a transition from PHIMS to WDRS; a new surveillance database to report notifiable conditions. WDRS captures RVCT data to report to the CDC, as well as provides a tool for LHJs to document case management information, including contacts. PHIMS replaces the EpiX system, which reports tuberculosis (TB) cases to the CDC. This information is assessed during medical case review, and is useful in understanding at-risk populations to guide future prevention efforts.

Public Health Reporting Electronic Data (PHRED)
Laboratories continue to move towards PHRED as a mechanism for electronic lab reporting. DOH reviews these lab reports and notifies LHJs, or other states, of testing results. Work is being done to integrate PHRED to directly populate lab data into WDRS, to make notifications more seamless in the future.

Secure File Transfer
All confidential information (e.g., labs, reports, data, EpiX) is sent between the DOH and LHJ TB Programs through SFT. Users are required to set up SFT accounts in order to access their designated files. Items placed in the files must be pulled from the system within two weeks or they will auto-delete. When an item is uploaded to an SFT file, the sender notifies the receiver, via email, of an item needing to be viewed. LHJs are encouraged to utilize SFT, if they do not have secure email, as an alternative way to share confidential data.

Electronic Disease Notification (EDN)
This CDC database provides contact information and medical records for people arriving into the United States (U.S.) as immigrants or refugees. The Class B screening program is intended to identify and treat high risk populations with TB infection in order to prevent future TB disease cases.

Class B arrivers are identified as having a Class B condition, such as non-infectious TB or TB infection. Domestic medical follow-up is recommended for arrivers who have a Class B TB condition.

The DOH downloads medical documents for Class B arrivers and sends them to the LHJs for medical follow-up. Eleven LHJs and the DOH Refugee Health Program are set up with direct access to EDN to streamline the process. Once the medical evaluation is completed, the LHJ returns the documentation to the DOH to enter into EDN.

National Tuberculosis Indicator Project (NTIP)
The CDC’s NTIP aims to prevent, control, and eventually eliminate TB from the United States.
by monitoring national program objectives and performance targets, while collaborating with international partners in controlling global TB. The DOH TB Program monitors state and county TB data to assess how well Washington (WA) is meeting NTIP objectives and performance targets for 2020.

<table>
<thead>
<tr>
<th>NTIP Objective</th>
<th>2020 NTIP Target</th>
<th>Washington Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Initiation</td>
<td>97.0%</td>
<td>88.4%</td>
</tr>
<tr>
<td>Recommended Initial Therapy</td>
<td>97.0%</td>
<td>96.9%</td>
</tr>
<tr>
<td>Known HIV Status</td>
<td>98.0%</td>
<td>90.5%</td>
</tr>
<tr>
<td>Sputum Culture Result Reported</td>
<td>98.0%</td>
<td>92.6%</td>
</tr>
<tr>
<td>Sputum Culture Conversion</td>
<td>73.0%</td>
<td>65.3%</td>
</tr>
<tr>
<td>Drug-Susceptibility Results</td>
<td>100.0%</td>
<td>96.9%</td>
</tr>
<tr>
<td>Universal Genotyping</td>
<td>100.0%</td>
<td>74.2%</td>
</tr>
</tbody>
</table>

TB in Washington - 2016

TB disease is trending downward, overall. The 204 cases counted in 2016 represent a 1.4% decrease from 2015.

Approximately 3 out of 4 TB cases were born in a country where TB is common. Over a third developed TB 15 or more years after arriving in the United States.

These race/ethnic groups make up the majority of TB cases.

- 50% Asian
- 16% Black
- 15% Hispanic

Older adults and men are at highest risk for TB.

Fourteen TB specimens were resistant to one or more first-line drugs. Two were multidrug-resistant (MDR TB).
A typical TB case requires:

- 180 days of medication
- • X-rays
- • Lab tests
- • Follow-up & testing of contacts
- • Directly observed therapy (DOT)

The majority of TB cases involved a pulmonary site; 34% had cavitary disease.

Medical conditions can increase risk for TB. Between 2014-2016, 18% of reported TB cases also had diabetes.

TB case counts statewide in 2016:

<table>
<thead>
<tr>
<th>Disease site</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any extrapulmonary</td>
<td>56</td>
<td>27%</td>
</tr>
<tr>
<td>Lymphatic, cervical</td>
<td>18</td>
<td>9%</td>
</tr>
<tr>
<td>Pleural</td>
<td>7</td>
<td>3%</td>
</tr>
<tr>
<td>Genitourinary</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>Ocular</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>Bony and/or joint</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Lymphatic, intrathoracic</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Meningeal</td>
<td>5</td>
<td>2%</td>
</tr>
<tr>
<td>Peritoneal</td>
<td>5</td>
<td>2%</td>
</tr>
<tr>
<td>Lymphatic, axillary</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Colon</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Central/peripheral nervous system</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Skin</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Splenic</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Multiple sites</td>
<td>5</td>
<td>2%</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>
Training and Education

Educating Healthcare Professionals
The DOH TB Program offers training and educational resources to improve understanding, skills, and confidence in evaluating and managing patients with TB infection or TB disease. Training topics are based on identified needs or requests.

The DOH TB Program partners with Curry International Tuberculosis Center/University of California San Francisco (CITC/UCSF) and Firland Northwest Tuberculosis Center (FNTC) to offer TB Intensives each year. The DOH led planning efforts on the 2016 TB Nursing Workshop.

The DOH TB Program also sponsors an annual Washington State TB Educational Conference, with CITC/UCSF providing continuing education credits and Firland Foundation and Workshop assisting with funding. This free conference provided several travel scholarships for attendees to join in person.

A planning committee of nurses, physicians, and TB professionals developed the agenda.

<table>
<thead>
<tr>
<th>Date</th>
<th>Organization or Event</th>
<th>Training Topic</th>
<th>Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/14</td>
<td>Spokane Regional Health District</td>
<td>TST Training</td>
<td>15</td>
</tr>
<tr>
<td>4/15</td>
<td>Washington Association of Diabetes Educators</td>
<td>TB and Diabetes Mellitus (DM)</td>
<td>40</td>
</tr>
<tr>
<td>4/21</td>
<td>Pacific NW Ambulatory Care Nurse Conference</td>
<td>Tuberculosis Update 2016</td>
<td>40</td>
</tr>
<tr>
<td>5/5</td>
<td>Health Point Medical Center</td>
<td>TB Infection: Diagnosis and Treatment</td>
<td>100</td>
</tr>
<tr>
<td>5/9</td>
<td>TB Project ECHO®</td>
<td>TB and DM</td>
<td>41</td>
</tr>
<tr>
<td>6/14</td>
<td>TB Intensives</td>
<td>TB Nursing Workshop</td>
<td>40</td>
</tr>
<tr>
<td>10/19</td>
<td>WA State TB Educational Conference</td>
<td>Various</td>
<td>140</td>
</tr>
<tr>
<td>11/2</td>
<td>Curry International TB Center</td>
<td>Strategies for Dose Counting</td>
<td>35</td>
</tr>
</tbody>
</table>
Training and Education

based on feedback from previous conference evaluations as well as current TB topics. Participants consistently rate the conference presentations as useful to their work.

Educating the Public

Each year World Tuberculosis Day (WTBD) provides an opportunity to raise public awareness about the global health threat of TB and its impact on Washingtonians.

In recognition of WTBD, the DOH TB Program coordinated a staff lunch and learn with Diana Yu, M.D., MSPH (Mason County Health Officer and TB Advocate). Dr. Yu discussed the history of TB, including information about the modern-day global TB health crisis.

WTBD planning partners also hosted a community forum with speakers presenting a local, state, and global perspective of the TB crisis. Panelists included Diane Welch, MS, RN (Clark County Public Health); Scott Lindquist, MD, MPH (DOH); Erika Arthun (Bill and Melinda Gates Foundation); and moderator, Enrique Cerna (KCTS 9).

Planning partners included: American Lung Association of the Mountain Pacific, Center for Infectious Disease Research, FNTRC, IDRI, RESULTS WA, TB Photovoice, The Seattle Public Library, and the DOH TB Program. A grant was provided by the Firland Foundation and Workshop. Approximately 100 people attended the two WTBD events.

The DOH TB Program participates in other public education events as opportunities arise. In 2016 the DOH TB and Refugee Health Programs paired up to share information at the Somali Health Board’s 4th Annual Health Fair.

Diane Welch presents during a WTBD forum with co-presenters Erika Arthun and Scott Lindquist.
Laboratory and Genotyping

The Washington State Public Health Laboratories (WAPHL) TB laboratory operates Monday – Friday, receiving clinical specimens including isolates of *M. tuberculosis complex* (MTBC) identified by other laboratories. The following methods are used routinely:

- **Processing of clinical specimens**
  Specimens are inoculated onto BACTEC-brand MGIT (Mycobacteria Growth Indicator Tube) media, LJ (Lowenstein-Jensen) slants, and 7H11 plates (a.k.a. 7411 Middlebrook media).

- **Acid-Fast Bacilli (AFB) Microscopy**
  A smear is made on the diagnostic specimens, and a fluorescent stain is used to detect AFB. The smear is read and reported within 24 hours of receiving the specimen. On Fridays, and the day before a holiday, the smear is stained, read, and reported on the same day.

- **NAAT (Nucleic-acid amplification test)**
  An in-house developed real-time PCR (Polymerase Chain Reaction) test for *MTBC* and *M. avium complex* (MAC) is performed on all first time positive smear diagnostic specimens or on negative smear specimens upon request of the provider.

- **Identification of AFB positive cultures**
  Identification is performed by the GenProbe Accuprobe test for MTBC, MAC, *M. gordonae* and *M. kansasii*.

- **Sensitivity Testing**
  First-line drug susceptibilities are performed on the first isolate of MTBC, per patient, using the BACTEC MGIT broth method. If resistance is detected to Streptomycin, Isoniazid, Rifampin, or Ethambutol, the results are confirmed by agar proportion using disk diffusion method. In addition to the first-line drugs, the second-line drug susceptibilities are performed to provide a wider range of drug susceptibility testing (DST).

- **Genotyping submission**
  One MTBC isolate per patient is submitted for genotyping. The DOH TB Program leads quarterly genotype-cluster reviews in order to analyze results of each specimen, identify epidemiological links to help control potential outbreaks, and define focus areas for intervention.

- **Reporting**
  Any new positive results are notified to the submitter by phone. All results are distributed via auto-fax system through LIMS. The DOH TB Program is able to access the data in LIMS to obtain results in real time.

- **Specimen submission**
  Washington State has a core lab system. Clinical specimens, from private health care sources, are sent to designated reference labs or core labs. The core labs isolate and identify the AFB organisms. Some of these core labs perform MTBC sensitivities, and submit one MTBC isolate per patient to the WAPHL for additional sensitivities, prolonged storage, and submission for genotyping. On rare occasions, the AFB positive isolates are sent to the WAPHL for species identification.
TB Laboratory Highlights

<table>
<thead>
<tr>
<th>Description</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual patients processed with a NAAT (9.9% positive)</td>
<td>544</td>
</tr>
<tr>
<td>Specimens processed for smear and culture (371 individual patients)</td>
<td>1578</td>
</tr>
<tr>
<td>- 15% of patients had at least one positive MTBC</td>
<td></td>
</tr>
<tr>
<td>- 53% of patients with positive MTBC were initially positive by NAAT</td>
<td></td>
</tr>
<tr>
<td>Individual patients were processed for growth-based MTBC first-line DST</td>
<td>136</td>
</tr>
<tr>
<td>Patients were ruled out or confirmed for MTBC through processing a reference isolate</td>
<td>8</td>
</tr>
<tr>
<td>- 50% of these patients had at least one reference isolate identified as MTBC</td>
<td></td>
</tr>
</tbody>
</table>
Quality Assurance and Improvement

**Cohort Review**
Cohort Reviews are semi-annual video conference meetings, between the DOH and LHJs, to promote best practices and monitor progress towards national TB indicators.

Prior to Cohort Review, a report card is provided to any LHJ with cases counted during the given evaluation period. Each report card gives the LHJ their progress in meeting TB program performance indicators, along with comparisons to Washington State.

LHJ report cards include listings of TB cases in which any performance benchmark was not met, giving LHJs a focused review to identify opportunities for improving performance. A review and discussion of state indicator data is presented during Cohort Review. A themed discussion of 2-3 TB case studies follows the state indicator presentation. Themes highlight best practices or challenges we are having as a state.

In 2015 program evaluation projects were introduced to the Cohort Review agenda. LHJs were encouraged to choose an indicator that they wish to focus on within their program. The DOH provided tools to assist LHJs with program evaluation. In 2016 several LHJs reported which indicator they selected and why. They discussed how they planned to improve performance on their chosen indicator and if they had any preliminary results from their intervention. LHJs that do not have capacity to start a program evaluation project can use this platform as an opportunity to learn from others, and incorporate ways to improve their programs. Evaluations suggest participants agreed, or strongly agreed, that they “learned helpful strategies and will make changes based on the things they learned” during the meeting.

**Medical Case Review**
Medical Case Review is a quarterly quality assurance process for TB case management. TB cases are reviewed in PHIMS (now WDRS) to ensure that documentation is accurate, complete, and the treatment plan is appropriate. Case reviews give each LHJ the opportunity to have one-on-one consultation with the DOH TB Medical Consultant, TB Controller, and TB Nurse Consultant regarding each of their open, counted cases. In 2016 the DOH Process Improvement Coordinator also joined the meetings to help identify educational needs and track follow-up issues regarding patient data.
Each case review takes approximately 5-15 minutes per LHJ, depending on the number of cases. Trends or issues needing additional education can be used as examples in the themed discussions during Cohort Review.

**Program Evaluation**

The DOH TB Program continues to refine internal and external processes to improve quality of case management for TB patients and reporting of TB data for surveillance throughout Washington State.

One way the DOH TB Program receives feedback from partners is through an annual customer satisfaction survey. For the first time the survey was offered online and distributed to over 500 TB partners. Results were overall favorable, however “serving customers in a timely manner” was acknowledged as an opportunity for improvement. We used this information to start a Lean project to develop processes for monitoring and responding to customers, including maintaining current contact information for partners.
Technical Assistance and Capacity Building

The DOH TB Program offers technical assistance to healthcare professionals and responds to inquiries from the public. Patient resources and provider tools are also available on our website.

Quarterly updates are sent to over 500 TB partners through the TB News publication, which features current recommendations, staff highlights, frequently asked questions, resources, training, and year-to-date TB case counts.

Washington was the first state to use videoconference technology to mentor both private and public health providers by adopting the ECHO® model from University of New Mexico School of Medicine in September 2015. This telementoring model builds capacity for primary care providers to manage TB infection cases, and coordinate with their public health colleagues on TB disease cases. Guided by a panel of TB specialists, the learning community increases their TB knowledge, skills, and self-efficacy by participating in TB didactics and case consultation.

TB Project ECHO® is coordinated through a collaborative partnership between the DOH TB Program, FNHC, and the University of Washington. TB ECHO® sessions are offered twice a month, over the lunch hour. Participants can earn one continuing education credit per session.

First year evaluations suggest that TB ECHO® participants feel more skilled and confident in applying and sharing TB-related information. The results also identified a need to help participants feel more comfortable in presenting cases. This will be a focus of future programming efforts.

"I think TB ECHO is an excellent tool for us to learn about TB and improve our practice.”

- Evaluation Participant
TB ECHO® Evaluation Summary
September 2015 - September 2016

Summary of Sessions
- 23 sessions
- 127 participants (average 23 per session)
- 33 cases presented
- 1 continuing education credit offered per session

Sectors Represented
- 35% Primary Care
- 61% Public Health
- 3% Regional Training & Medical Consultation Centers

Professions Participating
- 53 Nurses
- 42 Medical Providers
- 32 Support Staff

TB ECHO® Panel:
Masa Narita, Jessica Nayak, SheAnne Allen, Scott Lindquist, Lana Kay Tyer, and David Horne
National TB Efforts

All DOH TB Program staff are encouraged to participate in national workgroups and present at national conferences. This enables staff to remain current on the latest TB treatment and prevention strategies, and share Washington State expertise and innovative projects with other states.

Heidi Iyall presents during a TB ECHO® plenary with co-presenters Bruce Struminger and Diana Fortune.

Justina Novak, Sherry Carlson, Heidi Iyall, and SheAnne Allen lead a breakout session on engaging private providers in TB infection care.

- **NTCA Conference**
  - TB Controller and Nurse Consultant attended for up-to-date clinical information, and to share/learn about TB-related projects.
  - Poster presentation on Changes in the TB Care System in Washington State 2009-2015 (LHI survey results)

- **IUATLD Conference**
  - TB Controller, Operations Coordinator, and Epidemiologist attended for up-to-date clinical information/research advances, to share projects, and learn from others.
  - Poster presentation on Using ECHO® to Address TB Infection in Washington State
  - Poster presentation on Foreign-born pulmonary TB in Washington State 2009-2013: analysis based on visa type and overseas screening status.

- **ETN/PEN Conference**
  - TB Controller, Operations Coordinator, Process Improvement Coordinator, and Communications Outreach Consultant attended to learn about, and share, innovative TB education and evaluation strategies.
  - Poster presentations on: Using ECHO® to Address TB Infection in Washington State and 340B Drug Pricing Program Compliance Improvement
  - TB Program staff presented in a plenary on using the ECHO® model for managing TB infection and disease cases as well as a break-out session on engaging private providers in TB infection care.

- **Four Corners TB & HIV Conference**
  - TB Controller attended to learn strategies about “caring for the whole person” in TB and HIV management.

- **ECHO® Replication Training**
  - TB Nurse Consultant and Communications Outreach Consultant attended to learn how to implement the ECHO® model including: budget, promotions, forms, enrollment, and IT requirements.
Shawn McBrien stands with his poster submission for the IUATLD Conference.

Lana Kay Tyer, SheAnne Allen, and Jessica Nayak pose with their poster submission for the IUATLD Conference.

<table>
<thead>
<tr>
<th>Committee</th>
<th>2016 Accomplishments / Highlights</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTCA Board</td>
<td>Former TB Controller, SheAnne Allen, was elected to Board treasurer.</td>
</tr>
<tr>
<td>NTCA All Member Calls</td>
<td>Sherry Carlson and SheAnne Allen participated in quarterly calls to ensure Washington was represented and informed of NTCA activities.</td>
</tr>
<tr>
<td>NTCA Infection Reporting Workgroup</td>
<td>Sherry Carlson helped develop a case definition for TB infection and tiered reporting recommendations.</td>
</tr>
<tr>
<td>NTNC TB Nurse Certification Workgroup</td>
<td>Lana Kay Tyer was elected to Committee Co-Chair. The Committee is working on a National TB Nursing Certification.</td>
</tr>
<tr>
<td>EDN Database Workgroup</td>
<td>Shannon Franks is helping CDC develop an eMedical system to obtain timely and accurate information for all arrivals and be able to view digital x-ray files online. This will also shorten notification of new arrivals.</td>
</tr>
<tr>
<td>TB Education and Training Network Workgroup</td>
<td>Heidi Iyall and Sherry Carlson helped plan a webinar and conference to showcase innovative TB educational activities in the U.S. The webinar had 400 participants and the TB ETN/PEN Conference had 225 participants.</td>
</tr>
<tr>
<td>TB Program Evaluation Workgroup</td>
<td>Justina Novak helped plan four webinars, and sessions for the TB ETN/PEN Conference, on innovative TB program evaluation tools/activities being implemented in the U.S.</td>
</tr>
<tr>
<td>• PEN Steering Committee</td>
<td>Justina was elected to Chair-Elect of the PEN Steering Committee.</td>
</tr>
<tr>
<td>TB GIMS</td>
<td>Sherry Carlson participated in bi-monthly webinars to acquire updated information and education on genotyping activities</td>
</tr>
<tr>
<td>• TB GIMS Super User</td>
<td>Staff partnered to coordinate a number of educational events including:</td>
</tr>
<tr>
<td>Collaboration with CITC/UCSF</td>
<td>• TB Nursing Workshop (June 2016).</td>
</tr>
<tr>
<td></td>
<td>• TB Clinical Intensive (June 2016).</td>
</tr>
<tr>
<td></td>
<td>• Annual WA State TB Educational Conference (October 2016).</td>
</tr>
<tr>
<td></td>
<td>• Support and attend CITC/UCSF webinars (Various).</td>
</tr>
<tr>
<td></td>
<td>• Participate on the Western Region Calls (Quarterly).</td>
</tr>
</tbody>
</table>