**state of nevada**

**department of Health and human Services – Division of public and behavioral health**

**Tuberculosis elimination and control Program**

Catalog of federal domestic assistance (cfda) number: 93.116

Funding Opportunity Announcement (Foa) Number: 05003

GRANT NUMBER: 5U52PS907855

**Annual progress report for 2013**

**march 31, 2014**



***The Nevada TB Program Overview:***

The mission of the Nevada Division of Public and Behavioral Health’s Tuberculosis Elimination and Control Program is to prevent, control, track, and ultimately eliminate tuberculosis (TB) in the citizens and residents of Nevada. The Nevada TB Program is made up of: the Nevada Division of Public and Behavioral Health, three local health districts; Southern Nevada Health District (SNHD), Washoe County Health District (WCHD), and Carson City Health and Human Services (CCHHS); the Nevada State Public Health Laboratory (NSPHL); the Nevada Division of Public and Behavioral Health’s Public Health and Clinical Services (PHCS) Program, the Department of Corrections, and all agencies, organizations and health professionals interested in advancing Nevada’s progress toward improving our TB prevention and control measures.

Nevada is the 7th largest state in the nation with a large majority of the state being vast, sparsely populated areas. Although, the 7th largest in mass, Nevada is the 9th least densely populated state in the nation. The state is composed of 17 counties that cover over 110,000 square miles. Of the 17 counties in Nevada, three are considered urban (Clark, Washoe, and Carson City), one is considered rural (Douglas), and the 13 remainder are considered frontier. Areas with a “frontier” designation are defined as having 7 persons or less per square mile. Nevada’s frontier and rural counties account for only 10.7 percent of the state’s population, but 86.9 percent of the state’s land mass. Most of Nevada’s rural and frontier communities are located a considerable distance from the state’s major urban area health centers, illustrating the challenges of serving these residents. Nye County, located in the southern region of the state, is the third largest area county in the continental United States and has only 2.3 persons per square mile. Over two-thirds of the state’s population is concentrated in Clark County (containing the Las Vegas metropolitan area).

Nevada’s racial/ethnic composition based on the 2010 Census data is: 66.2 % White, 8.1 % Black or African American, 7.2 % Asian, 1.2 % American Indian and Alaska Native, 0.6% Native Hawaiian & Other Pacific Islander, 12.6 % Other and 4.7% from two or more races. Nevada’s Hispanic or Latino population makes up 26.5% of the population. Nevada has great cultural diversity. Las Vegas is a minority majority city. As minority populations (specifically foreign-born) tend to have disproportionately higher rates of TB (due to high TB incidence rates in their countries of origin) and are more likely to be uninsured or underinsured, Nevada will need to prepare for the increased demand on its existing infrastructure, to provide appropriate medical services to control the spread of TB.

In 2012, according the Bureau of Labor Statistics annual report, Nevada experienced the highest unemployment rate in the country, at an average of 11.1%. This factor is significant in hampering access to healthcare and in delays in seeking healthcare, however, we expect to see a spike in TB cases once workers return to the system and this barrier is lessened. Nevada must maintain its TB Control infrastructure to prepare for the burgeoning economic recovery.

Nevada’s TB Programs are staffed as follows:

**Nevada Division of Public and Behavioral Health** – Tuberculosis Elimiation and Control Program:

Patricia Townsend, State TB Controller.

**Southern Nevada Health District** (Clark County)

Richard Cichy, Community Health Nurse Manager

Laurie Hickstein, Senior Community Health Nurse/Acting Supervisor

Community Health Nurse Case Managers, Jacqueline Arnold and Melissa Lynch

Community Health Nurses (CHN), Diana Valencia, Regena Ellis, Sheri Fritzman, Matia Guest

Licensed Practical Nurse, Sheila Gutierrez

Disease Data Collection Specialist, Heather MacDavid

Disease Investigation and Intervention Specialist (DIIS), Jennifer Harmon and Brandon Osborn

Sr. Disease Investigation and Intervention Specialist, Haley Blake

Senior Administrative Clerk, Kim Ogren

Administrative Assistant, Enrique Lopez

**Washoe County Health District**

Lisa Lottritz, TB Program Manager

Diane Freedman, TB Program Coordinator

Judy Medved-Gonzalez, TB Clinic Case Manager PHN.

**Carson City Health and Human Services**

Marena Works, RN, APN, MSN, MPH, Director for Carson City Health and Human Services Dustin Boothe, MPH, Case Manager for the TB cases in Carson City, Lyon and Douglas Counties.

**Public Health and Clinical Services** Program (PHCS) currently has 14 Community Health Nurses on staff, who coordinate the care for TB and LTBI patients in the remaining 12 counties.

***Nevada Epidemiological Profile:***

In line with the CDC’s goal to promote and protect the nation’s health ([Healthy People 2020](http://www.healthypeople.gov/2020/default.aspx)), Nevada’s Tuberculosis Program, in accordance with Nevada Revised Statutes, supports TB prevention and control activities across the State.

Nevada identified 92 new active cases of TB in 2013, (case rate of 3.3 per 100,000 population and a five-year average of 98.4 new cases per year). Nevada’s case count rose from 84 new active cases identified in 2012. Additional active cases resulting from interjurisdicaional transfers were managed by the local health authorities, adding to their case management burden.

The State of Nevada’s Tuberculosis Program is facing many significant challenges in addressing its mission of reducing the incidence of TB through the aggressive management of newly diagnosed cases and extensive preventative treatment of those infected with TB. The most notable and unpredictable encumbrance is the complexity of the TB cases in Nevada. In 2013, we managed a NICU outbreak in a local hospital, which resulted in multiple deaths and substantial transmission and was prominently coverered in the national media, a case in a high school which received also received notable media attention, multiple MDR-TB cases, and multiple active cases involving international travelers which required multi state and multi nation investigations.

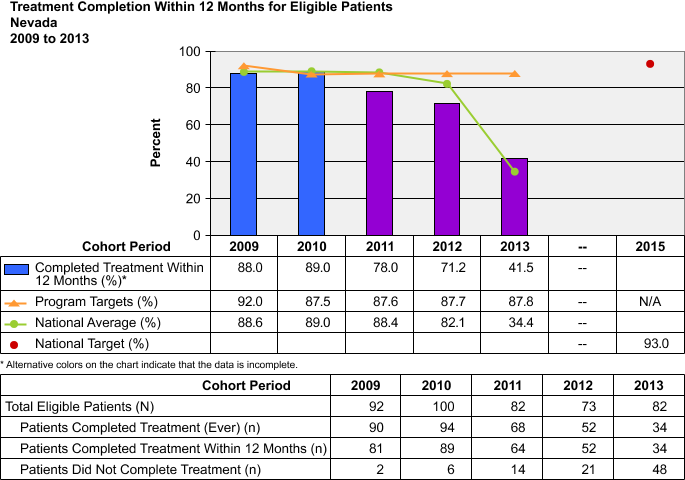
Our local, state, and federal correctional facilities also experienced both active cases, suspect cases, a multistate outbreak, and many LTBI patients who required consultation and monitoring during incarceration and after release by our local health authorities. The State TB Controller, who is the designated Correctional Liasion, conducts annual site visits of every state and federal correctional facility in the state and provides training and technical guidance within these facilities. Local facilities are visited on an as needed or as requested basis. In past years, Nevada had a Public Health Advisor who coordinated these efforts and actively worked to increase and improve communication and collaboration between the health authorities and the correctional faciliites within their jurisdictions. Our Public Health Advisor was relocated to a neighboring state, and has yet to be replaced, which has increased the burden on the state program which is staffed by a single FTE (the State TB Controller). Washoe County has had long-standing relationships with the detention facilities in their area and continues to have successful communication and partneriships. Nevada has also seen elevated volume in cases transferred to the facilities under the jurisdiction of the Public Health and Clinical Services arm of Nevada’s TB program, which, despite separation by hundreds of miles, have been managed very effectively.

Prevention and Control Activities from January 1, 2013 through December 31, 2013

**Goal 1: Improve treatment completeness among identified cases of Tuberculosis.**

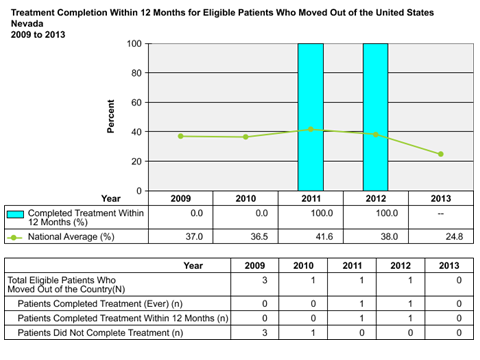
**Objective 1.1: For patients with newly diagnosed TB for whom 12 months or less of treatment is indicated, increase the proportion of patients who complete treatment within 12 months to 93.0%**

State Program Status: Unmet

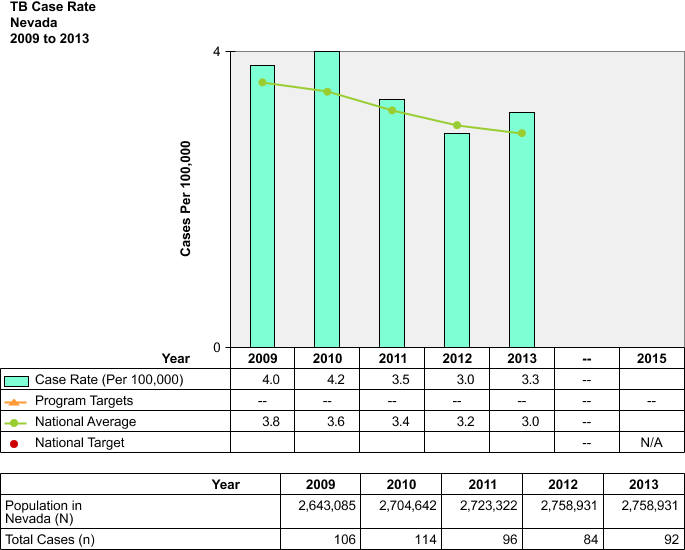


National Tuberculosis Indicators Project (NTIP) Data as of March 9, 2014

Discussion: As the standard treatment regimen for TB is 6 months or greater, analysis of 2013 completion rates will not be available for evaluation until well in to 2014. Nevada’s TB staff is well-trained, persistent, and as accommodating as possible to the needs of patients on treatment. Incentives and enablers are utilized to improve completion rates, yet we continue to struggle with meeting our goals. The complexity of the cases seen in Nevada has extended treatment regimens not only for some of our active cases but for some LTBI regimens; therefore, the adherence to treatment has been more difficult to sustain. Nevada has consistently performed near the national average for this objective, but has faced challenges with staffing levels and non-adherent clients. In fact,we have had multiple patients actively evading us for treatement, due to misperceptions that their legal or criminal status would be a factor. We work to educate patients that public health works independently of law enforcement, yet are not always successful, and some patients do not complete treatment due to this concern. On the newly captured data for COT for patients who moved out of the country, we have achieved 100 percent completion for 2011 and 2012, and expect to see comparable results for 2013 when all data is posted and reported. Completion rates are of top priority to us, and we will continue to pursue every possible option to ensure that regimens for active cases are fully completed.



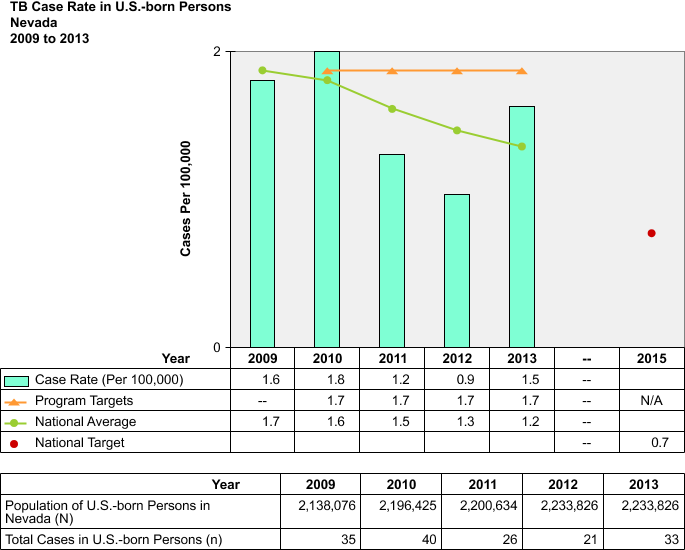
**Goal 2: Decrease TB Case Rates.**

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**Objective 2.1:**

* Decrease the TB case rate in **U.S. - born** persons to less than 0.7 cases per 100,000.
* Increase the average yearly decline in TB case rate in U.S.-born persons to at least 11.0%.

Status: Unmet



National Tuberculosis Indicators Project (NTIP) Data as of March 9, 2014

Five Year Target Objectives For: Nevada’s U.S. Born Case Rate Objective

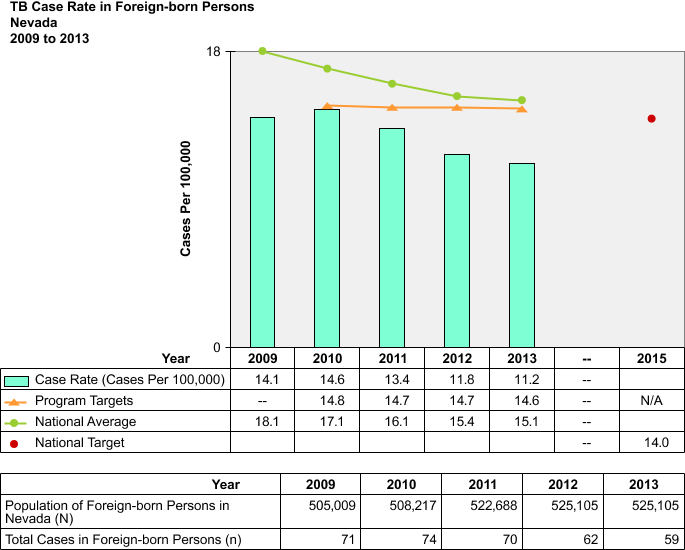
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2005-09 National Average** | **2005-09 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **2.08** | **1.62** | **1.71** | **1.70** | **1.69** | **1.68** | **1.67** | **0.7** |

Discussion: Approximately one-third of Nevada’s cases are U.S. born. Nevada had been experiencing a decline in TB cases in this population over the past several years and had maintained a case rate below the national average. This year, unfortunately, that trend did not continue. Many people are deferring seeking health care during Nevada’s economic crisis, and may have been missed in diagnosis in previous years and excluded from treatment. Nevada had the highest unemployment rate in the nation in 2012, and the Nevada TB program needs additional resources to be able to go out and find our cases that are being missed due to not being able to attain healthcare, and to provide targeted and comprehensive education to healthcare workers to reduce delays in diagnosis, which is a substantial issue in Nevada.

**Objective 2.2:**

* Decrease the TB case rate for **foreign-born** persons to less than 14.0 cases per 100,000.
* Increase the average yearly decline in TB case rate in foreign-born persons to at least 4.0%.

Status: Met



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For: Nevada’s Foreign Born Case Rate Objective

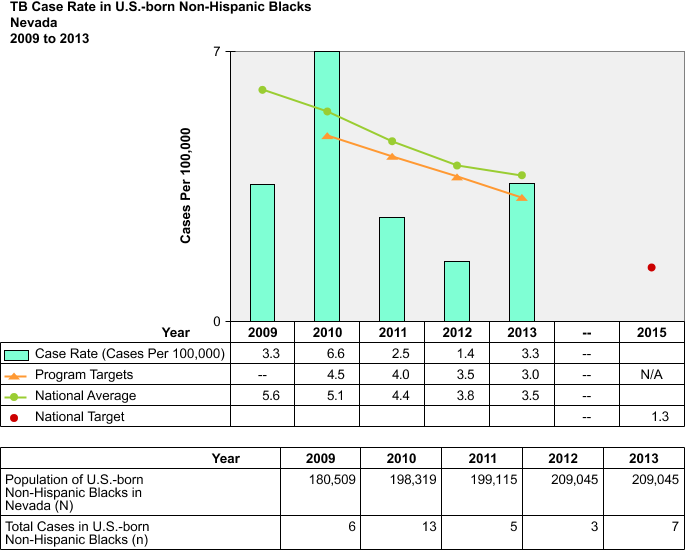
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2005-09 National Average** | **2005-09 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **19.9** | **14.9** | **14.8** | **14.7** | **14.7** | **14.6** | **14.6** | **14** |

Discussion: Approximately two-thirds of Nevada’s TB cases are foreign-born. In 2013, 68 percent of our cases were born outside of the United States, and our case rate in this category was lower than it has been in 5 years, and was substantially below the national average. Nevada has been able to sustain a fairly constant number in this population and maintain a rate below the national average. In Washoe County (Reno area), the highest yield of active cases comes from immigrants and refugees, who by definition are foreign. Nevada has noted decreasing case rates in this population overall, which may be in part attributable to our challenged state economy. Many of our foreign-born workers have been displaced through unemployment and have migrated back to their homelands. We anticipate that upon economic recovery, we will see a return of this population to fill the needs of the recovering industries in our state. Further, we believe that the modification and legalization of immigration policies will cause a new influx of cases in this population. Nevada must maintain its TB infrastructure to prepare for this bounceback.

**Objective 2.3:**

Decrease the TB case rate in **U.S.-born non-Hispanic** **blacks** to less than 1.3 cases per 100,000.

Status: Met



National Tuberculosis Indicators Project (NTIP) Data as of April 11, 2013

Five Year Target Objectives For: Nevada’s U.S.-Born non-Hispanic Case Rate Objective

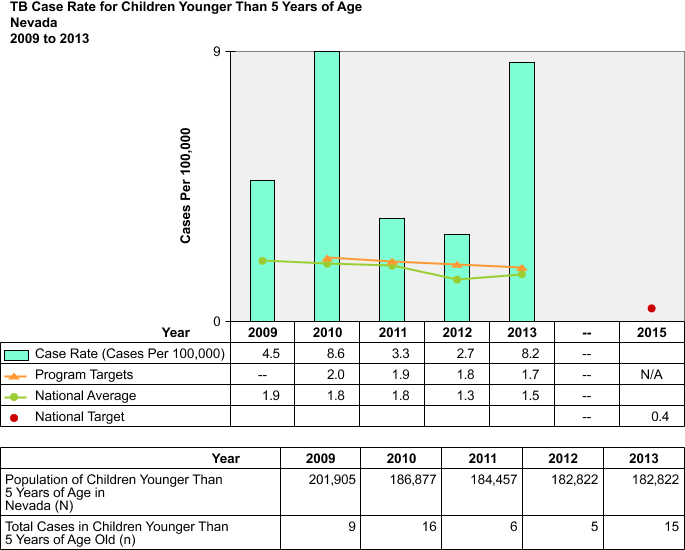
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2005-09 National Average** | **2005-09 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **7.16** | **4.2** | **4.5** | **4** | **3.5** | **3** | **3** | **1.3** |

Discussion: Nevada’s rate among this population has consistently been below the national average for this objective. Nevada also has a general Black and African American population that is below the national average, which contributes to this statistical showing. Nevada’s spike in 2010 was due to an outbreak among members of a gang whose membership primarily consisted of African-American youths. We expect continuous improvement to be seen in this population as a result of active educational and outreach efforts following our elevated rate in 2010.

**Objective 2.4:**

Decrease the TB case rate for **children younger than 5 years** of age to less than 0.4 cases per 100,000.

Status: Unmet



National Tuberculosis Indicators Project (NTIP) Data as of March 31, 2014

Five Year Target Objectives For:

Nevada’s children younger than 5 years Case Rate Objective

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2005-09 National Average** | **2005-09 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **2.26** | **2.98** | **2.0** | **1.9** | **1.8** | **1.7** | **1.6** | **0.4** |

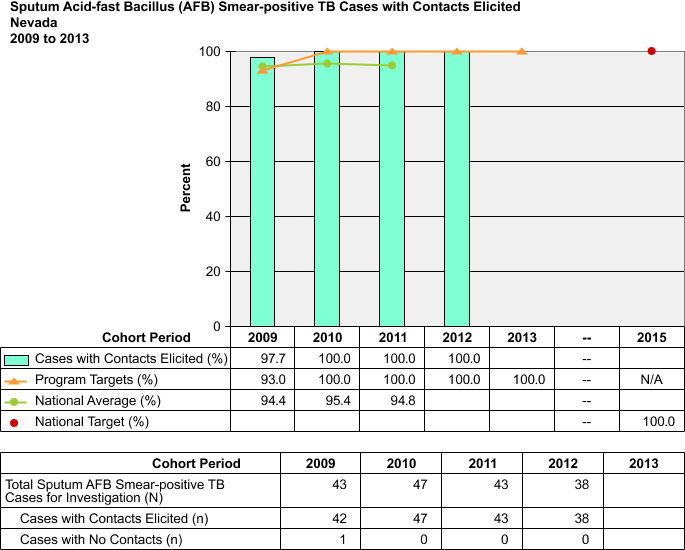
Discussion: Nevada continues to suffer from a pediatric TB rate well above the national average. Our elevated TB rate is the area of primary concern to the state TB program, due to the fact that is has remained consistently elevated for many years. In 2013, we experienced multiple pediatric cases, including deaths, associated with a hospital NICU outbreak. We are aware that the pediatric rate is an indicator of the overall disease rate in our state, and are increasing efforts to accelerate outreach and education efforts to pediatricians, educators, parents, and caregivers. We require funding to support these critical efforts on an ongoing basis.

**Goal 3: Improve Contact Investigations.**

**Objective 3.1:**

**Increase the proportion of TB patients with positive acid-fast bacillus (AFB) sputum-smear results who have contacts elicited to 100.0%.**

Status: Met



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

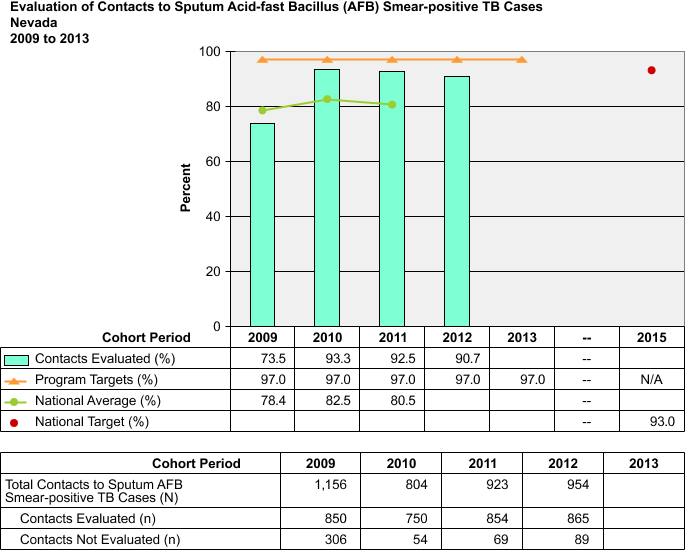
Five Year Target Objectives For: Percent of TB Cases with Contacts Elicited Objective

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2006-08 National Average** | **2006-08 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **92.76** | **100** | **100** | **100** | **100** | **100** | **100** | **100** |

Discussion: The standard of care in Nevada is to conduct a contact investigation interview on every pulmonary case of TB regardless of the smear result; all household contacts of extra-pulmonary cases are evaluated for infection. If TB is diagnosed post-mortem, the family, friends and coworkers are interviewed and contacts evaluated for infection. Since 2001, Nevada has not had a single pulmonary case that did not have contacts identified.

**Objective 3.2: Increase the proportion of contacts to sputum AFB smear positive TB patients who are evaluated for infection and disease to 93.0%.**

Status: Met



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

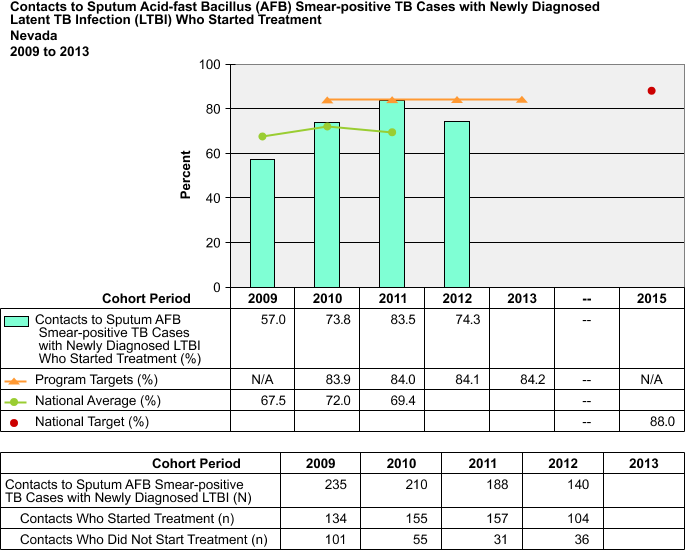
Five Year Target Objectives For: Percent of TB Contacts Who Receive an Evaluation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2006-08 National Average** | **2006-08 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **81.3** | **93.9** | **97** | **97** | **97** | **97** | **97** | **93** |

Discussion: In order to obtain complete evaluations, Nevada’s TB programs continue to actively pursue all contacts identified. To expedite the evaluation process the use of IGRAs has been utilized whenever possible and we are continuing to expand this screening methodology. Educating contacts on the importance of knowing their status in order to make an informed decisions regarding prophylactic therapy and the use of incentives and enablers are all methods used to elicit complete evaluation screenings. Nevada can most likely achieve the national goal of 93% for this objective by 2015, but our program target should be reduced to a more realistic goal, based on our current and historical performance.

**Objective 3.3:**  **Increase the proportion of contacts to sputum AFB smear-positive TB patients with newly diagnosed latent TB infection (LTBI) who start treatment to 88.0%**

Status: Unmet



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

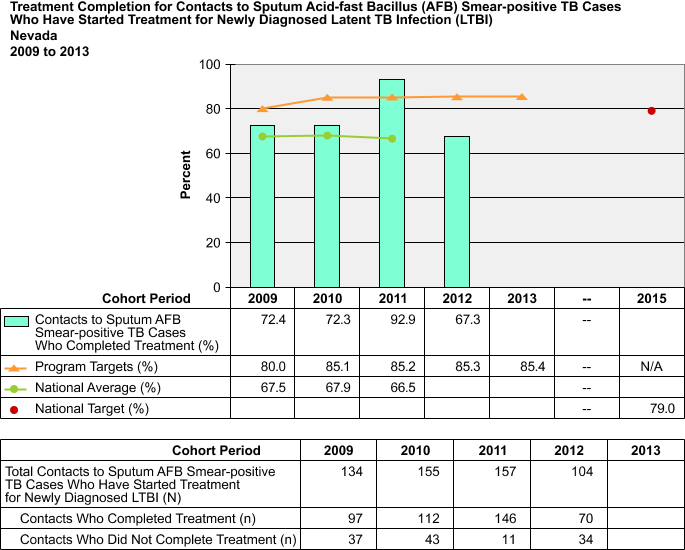
Five Year Target Objectives For: Percent of TB Contacts Who Start an LTBI Treatment Regimen

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2004-06 National Average** | **2006-08 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **72.2** | **64.8** | **83.9** | **84** | **84.1** | **84.2** | **84.3** | **88** |

Discussion: Preventative therapy is not mandatory, but highly recommended to all persons diagnosed with latent TB infection (LTBI) in Nevada. The LHA’s educate contacts about LTBI treatment options, and provide extensive education and counseling regarding the advantages of completing a treatment regimen for LTBI. They explain possible risks for the development of active TB disease if LTBI treatment is not completed and the protection LTBI therapy may provide. If the contact decides not to participate in a preventative treatment regimen they are provided information/education regarding the signs and symptoms to be aware of for TB disease and instructed to seek medical attention if they experience these signs and/or symptoms. The TB Program will continue with activities to ensure this objective reaches its highest possible percent participation level. As Nevada elected to participate in the 3HP (Rifapentine/Isoniazid) regimen trial, we are optimistic that the availability of this shortened regimen will improve treatment starts and allow us to achieve the national target by the end of this grant cycle.

**National Objective 3.4:** **For contacts to sputum AFB smear-positive TB patients who have started treatment for the newly diagnosed LTBI, increase the proportion who complete treatment to 79.0%.**

Status: Unmet



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For:

Percent of TB Contacts Who Complete LTBI Treatment Regimen

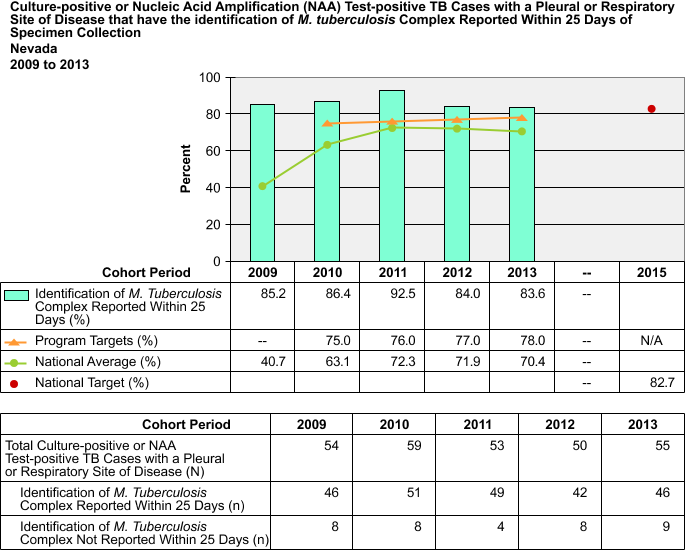
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2004-06 National Average** | **2006-08 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **65.9** | **76.2** | **85.1** | **85.2** | **85.3** | **85.4** | **85.5** | **79** |

Discussion: Preventative therapy is not mandatory, but highly recommended to all persons diagnosed with latent TB infection (LTBI) in Nevada. Whether due to the side effects associated with INH, the extensive time commitment required to complete a treatment regimen (compared to other communicable diseases), or the fact that the person does not feel ill, some contacts decide not to complete preventative therapy for LTBI. Nevada’s TB Program utilizes incentives, enablers, and counseling to address this challenge. Nevada is also one of 22 sites undergoing 3HP (Rifapentine/Isoniazid) 12-week trials. We are a comprehensive-tier state and expect to be able to evaluate the effectiveness of the alternative regimen on increasing completion. The TB Program will continue with activities to ensure this objective maintains its highest possible percent completion level, however our program targets are likely not achievable at this time due to the transient nature of our population and the level of patients lost due to leaving the state during our economic crisis.

**Goal 4: Improve Laboratory Reporting**

**Objective 4.1: Increase the proportion of culture-positive or nucleic acid amplification (NAA) test-positive TB cases with a pleural or respiratory site of disease that have the identification of *M. tuberculosis* complex reported by laboratory within 7 days from the date that the initial diagnostic pleural or respiratory specimen was collected to 80%.**

Status: Met



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014.

Five Year Target Objectives For:

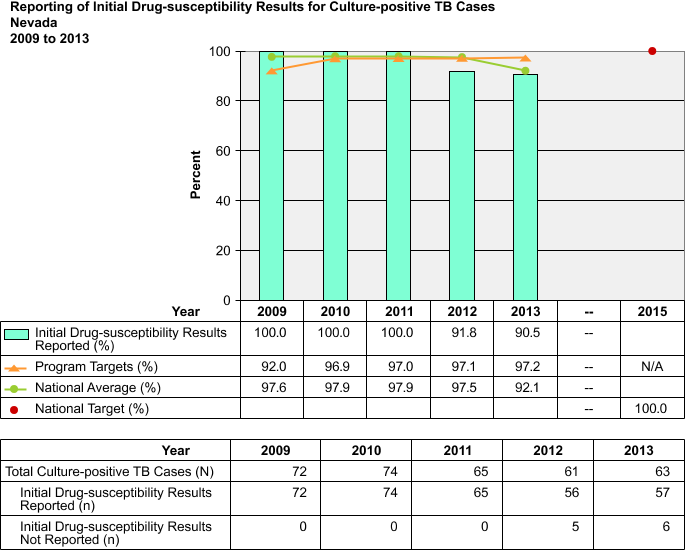
Percent of TB cases with an identity of MTBC reported within 7 days of specimen collection

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2009-10 National Average** | **2009-10 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **49.1** | **86.9** | **75%** | **76%** | **77%** | **78%** | **79%** | **80%** |

Discussion: NSPHL is meeting the national objective by performing timely testing and reporting of the nucleic acid amplification test which quickly identifies *M. tuberculosis* as the AFB seen on a smear when MTB is present in a culture. Nevada is currently exceeding both the national and program target percentages.

**Objective 4.2: Increase the proportion of culture-positive TB cases with initial drug-susceptibility results reported to 100.0%.**

Status: Unmet



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For:

Percent of TB culture-positive cases with drug-susceptibility results reported

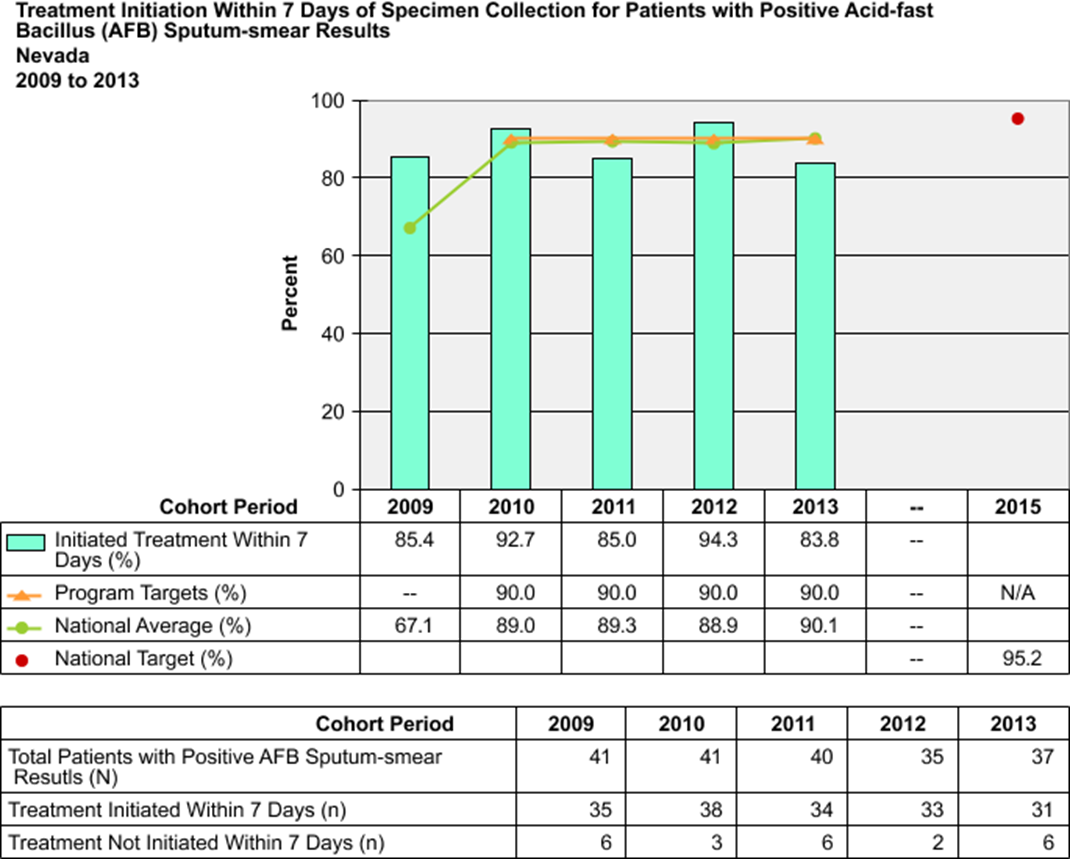
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2006-10 National Average** | **2006-10 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **95.1** | **97** | **96.9** | **97** | **97.1** | **97.2** | **97.3** | **100** |

Discussion: Nevada has historically ensured that >95% of cultures positive for MTBC receive drug susceptibility testing (DST). Reference laboratories are utilized to assist with attaining susceptibilities when needed. Investigation will be made into the specifics of the barriers which led to this slight reduction in previous levels.

**Goal 5: Expedite Treatment Initiation**

**Objective 5.1:** **Increase the proportion of TB patients with positive AFB sputum-smear results who initiate treatment within 7 days of specimen collection to 90%.**

Status: Unmet



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For:

Percent of MTB suspects with positive AFB smears that begin treatment with 7 days of specimen collection

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2009-10 National Average** | **2009-10 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **Not Available** | **87.8** | **90%** | **90%** | **90%** | **90%** | **90%** | **TBD** |

Discussion: The initial diagnosis of TB must be made by assessing the clinical features, patient history, preliminary laboratory results and the chest radiographic examination, and cannot be ruled out just because *M. tuberculosis* cannot be isolated. Providing technical assistance regarding the importance of starting the standard 4-drug regimen any time the suspicion is high for TB disease has been a goal of the TB Program for many years now. It is evident from this objective that the local programs are successfully educating the health care providers of the importance of “thinking TB” and initiating treatment early in the diagnostic phase. We intend to rebolster our efforts to increase our success in this area.

**Goal 6: Improve Sputum Culture Conversion Rates**

**Objective 6.1:** **Increase the proportion of TB patients with positive sputum culture results who have documented conversion to sputum culture-negative within 60 days of treatment initiation to 61.5%.**

Status: Ongoing



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For:

Percent of sputum culture conversions which occur within 60 days of treatment initiation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2006-09 National Average** | **2006-09 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **53.12%** | **61.85%** | **53%** | **53.5%** | **54%** | **54.5%** | **56%** | **61.5%** |

Discussion: With the complexity of the TB cases being treated in Nevada, extended treatment regimens are not uncommon due to extended conversion times. Additional risk factors a patient may have which could impair absorption and/or efficacy as well as difficulties associated with drug interactions, have also been contributing factors. Nevada is currently working on protocols in multiple counties for ordering blood drug levels and how to interpret the results of these levels. We have experienced a notable number of contaminated samples that had bacterial breakthrough and had to be re-run, leading to delays in documenting conversion. We believe that a contributing factor to this issue was related to the shipping procedures and believe that we have thoroughly addressed and corrected the issue. We should be well able to achieve the national target by 2015.

**Goal 7: Improve the Quality and Completeness of TB Data Reporting**

**Objective 7.1:** **Increase the completeness of each core Report of Verified Case of Tuberculosis (RVCT) data item reported to CDC, as described in the TB Cooperative Agreement announcement to 99.2% by 2015.**

Status: Ongoing

National Tuberculosis Indicators Project

Data Reporting: RVCT

Data Updated: 03/09/2014

National Objective:

Increase the completeness of all Report of Verified Case of Tuberculosis (RVCT) data item reported to CDC, as described in the TB Cooperative Agreement announcement, to 99.2% by 2015.

| **Variable** | **RVCT Fields (old/current)** | **Nevada 2013** | | | **Complete (%)** |
| --- | --- | --- | --- | --- | --- |
| **(N)** | **Unknown Missing (n)** | **Complete (n)** |
| Date of Birth | 7 / 8 | 92 | 0 | 92 | 100.0 |
| Race | 10 / 11 | 92 | 0 | 92 | 100.0 |
| Country of Origina | 11 / 12 | 92 | 2 | 90 | 97.8 |
| Month-Year Arrived in U.S.a | 12 / 13 | 59 | 2 | 57 | 96.6 |
| Status at Diagnosis of TB | 13 / 15 | 92 | 0 | 92 | 100.0 |
| Previous Diagnosis of Tuberculosis | 14 / 7 | 92 | 0 | 92 | 100.0 |
| Major Site of Disease | 15 / 16 | 92 | 0 | 92 | 100.0 |
| Sputum Smear | 17 | 92 | 0 | 92 | 100.0 |
| Sputum Culture | 18 | 92 | 1 | 91 | 98.9 |
| Culture of Tissue and Other Body Fluids | 20 | 92 | 1 | 91 | 98.9 |
| Nucleic Acid Amplification Test Result | NA / 21 | 92 | 0 | 92 | 100.0 |
| Chest X-ray | 21 / 22 | 92 | 0 | 92 | 100.0 |
| Tuberculin Skin Test at Diagnosis | 22 / 23 | 92 | 1 | 91 | 98.9 |
| HIV Status | 23 / 26 | 92 | 1 | 91 | 98.9 |
| Initial Drug Regimenb | 27 / 37 | 89 | 0 | 89 | 100.0 |
| Date Therapy Startedb | 28 / 36 | 89 | 0 | 89 | 100.0 |
| Initial Drug Susceptibility Resultsc | 33 / 39 | 63 | 3 | 60 | 95.2 |
| Susceptibility Resultsd | 34 / 40 | 59 | 2 | 57 | 96.6 |
| Sputum Culture Conversion Documentede | 35 / 41 | 50 | 30 | 20 | 40.0 |
| Date Therapy Stoppedb | 36 / 43 | 89 | 51 | 38 | 42.7 |
| Reason Therapy Stoppedb | 37 / 44 | 89 | 51 | 38 | 42.7 |
| Directly Observed Therapyb | 39 / 47 | 89 | 48 | 41 | 46.1 |
| TOTAL |  | 1,872 | 193 | 1,679 | 89.7 |

National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For:

Percent of Complete RVCT data reported to CDC

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2004-08 National Average** | **2004-09 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **Not Available** | **95.9%** | **94%** | **95%** | **96%** | **97%** | **98%** | **99.2%** |

Discussion: The state program manager issues monthly MUNK reports to all counties in an effort to ensure completeness of all RVCT data. We have addressed the challenges in this area, including some internal issues with our electronic reporting system, and expect to see marked improvement in the current and future periods.

**Objective 7.2:** **Increase the completeness of each core Aggregated Reports of Program Evaluation (ARPEs) data items reported to CDC, as described in the TB Cooperative Agreement announcement, to 100%.**

Status: Met

Five Year Target Objectives For:

Percent of Complete ARPE data reported to CDC

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2004-08 National Average** | **2004-09 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **Not Available** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |

Discussion: Nevada has, and will continue to report 100% complete ARPE data as described in the TB Cooperative Agreement.

**Objective 7.3:** **Increase the completeness of each core Electronic Disease Notification (EDN) system data item reported to CDC, as described in the TB Cooperative Agreement announcement, to 90%**

Status: Unknown

Five Year Target Objectives For:

Percent of Complete EDN data reported to the CDC

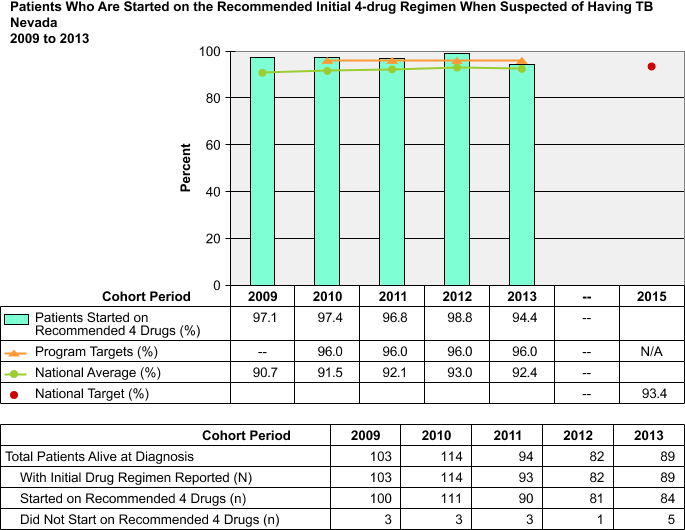
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **National Average** | **Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **Not Available** | **N/A – New variable** | **50%** | **50%** | **51%** | **52%** | **53%** | **100%** |

Discussion: The Electronic Data Notification System (EDN) system deployed in 2009 by the CDC’s Division of Global Migration and Quarantine (DGMQ) has improved the notification of the Class A, B1, B2, and B3 immigrants and refugees to the State TB Program. EDN reports have been limited and do not provide information specific to this objective at this time. Nevada is dedicated to continuous improvement in this area and considers this population to be a high priority and will ensure that all data is as complete as possible. While we do not anticipate reaching the 100 percent goal by 2015, we are making substantial progress in this area, and project that our trend of annual improvement will continue.

**Goal 8: Improve the Recommendation of Initial Therapy for TB Suspects.**

**Objective 8.1: Increase the proportion of patients who are started on the recommended initial 4-drug regimen when suspected of having TB disease to 93.4%.**

Status: Met



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For:

Percent of suspects started on 4-drug regimen

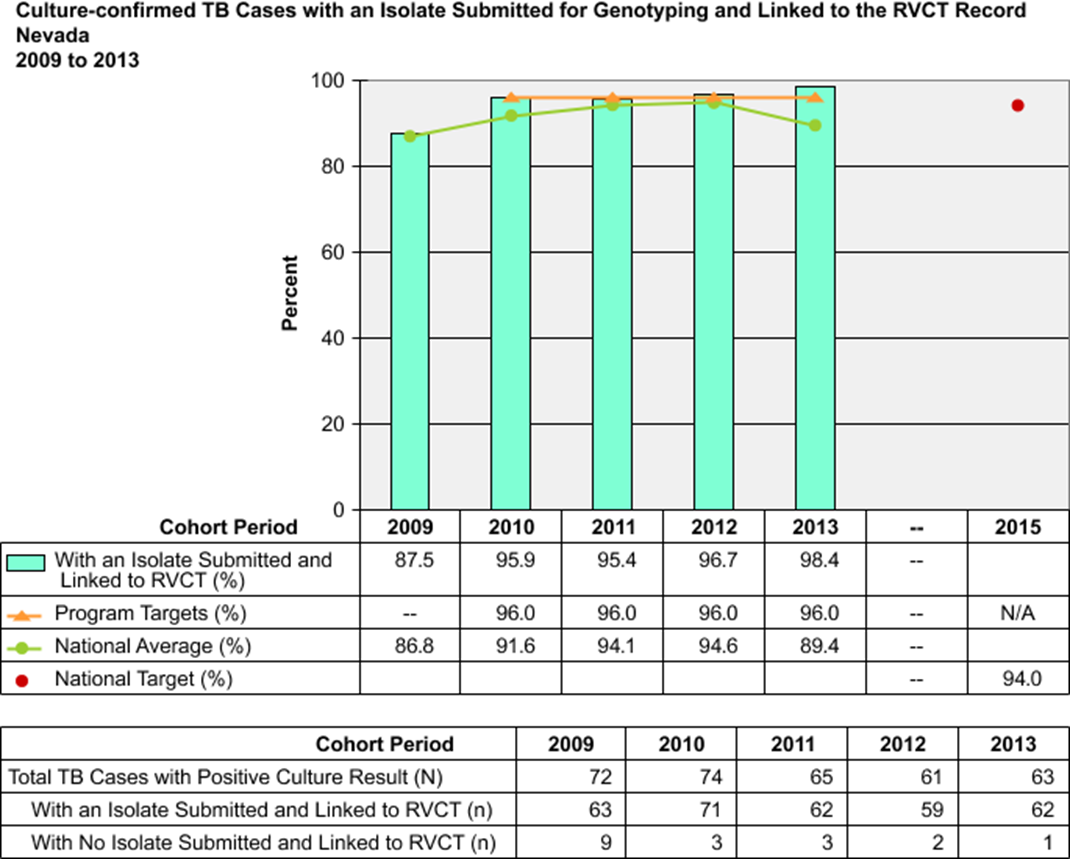
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2006-10 National Average** | **2006-10 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **88.4%** | **96.7%** | **96%** | **96%** | **96%** | **96%** | **96%** | **93.4%** |

Discussion: As LTBI is not a reportable disease in Nevada, this objective can only be recorded for suspects that are later confirmed to have active disease and are reported via the RVCT form. Nevada makes starting suspected TB patients on the standard 4-drug regimen early in the diagnosis process a priority (see objective 5.1 of this report), and has exceeded both the program and national targets for this objective.

**Goal 9: Obtain a Genotype for Culture Positive Cases.**

**Objective 9.1: Increase the proportion of culture-confirmed TB cases with a genotyping result reported to 94.0%.**

Status: Met



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For: Percent of culture positive MTB cases that have genotype reported

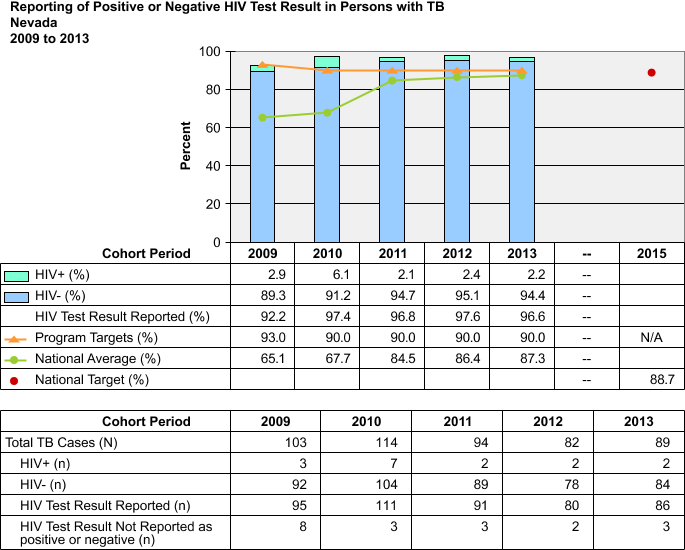
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2006-10 National Average** | **2006-10 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **N/A** | **93.2%** | **96%** | **96%** | **96%** | **96%** | **96%** | **94%** |

Discussion: The NSPHL submits every organism identified as MTBC for genotyping as part of their standard procedure. The super users for the system (State Controller and NSPHL Microbiology Supervisor) are both new to their positions in 2012 and are working on reconciling the cases that have missing or unknown data. We expect to be very close to 100% on this objective, and well above the national average.

**Goal 10: Know the HIV Status of TB cases.**

**Objective 10.1: Increase the proportion of TB cases with positive or negative HIV test result reported to 88.7%.**

Status: Met



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For: Percent of TB cases with an HIV result reported

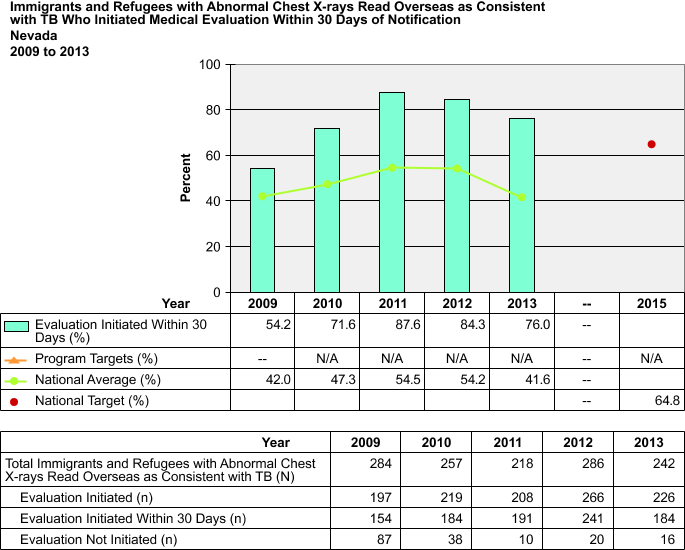
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2004-08 National Average** | **2006-10 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **78.9%** | **90.3%** | **90%** | **90%** | **90%** | **90%** | **90%** | **88.7%** |

Discussion: Nevada’s TB protocols recommend HIV testing for all TB patients, regardless of age. For persons who have died prior to TB diagnosis (or soon after) HIV status is reported if the documented results are available within the last two years. We do occasionally encounter some resistance from an isolated number of patients (very young or elederly) who refuse testing due to stigma or cultural considerations. These patients require additional time and education and ultimately the vast majority of all patients have a result reported. The TB and HIV Programs also conduct a data match to verify completeness and accuracy.

**Goal 11: Improve Immigrant and Refugee Evaluations.**

**Objective 11.1: For immigrants and refugees with abnormal chest x-rays read overseas as consistent with TB, increase the proportion who initiate medical evaluation within 30 days of arrival to 20%.**

Status: Met



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For:

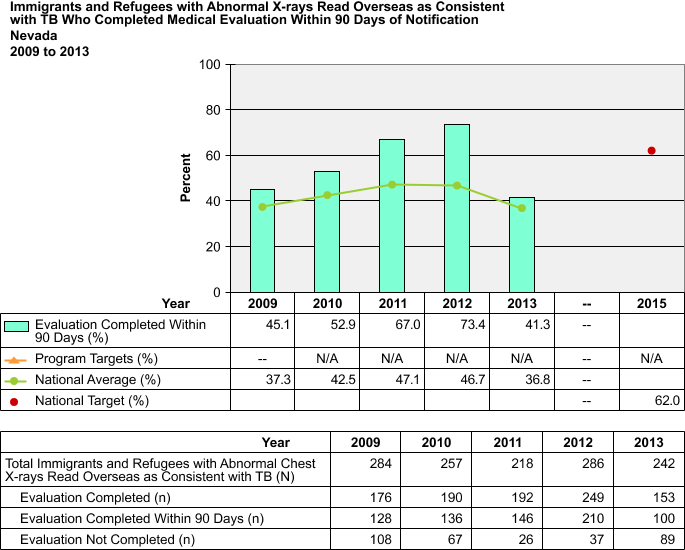
Percent of immigrants and refugees with a TB classification that receive an evaluation within 30 days of arrival

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **National Average** | **Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **Not Available** | **N/A – New variable** | **16%** | **17%** | **18%** | **19%** | **20%** | **20%** |

Discussion: Nevada’s TB Programs diligently pursue class B notifications to initiate and complete TB evaluations in a timely manner. As this is a known high risk group which yield active infectious cases every year targeting this population for complete evaluations is a priority for Nevada.

**Objective 11.2: For immigrants and refugees with abnormal chest x-rays read overseas as consistent with TB, increase the proportion who complete medical evaluation within 90 days of arrival to 45%.**

Status: Met



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For:

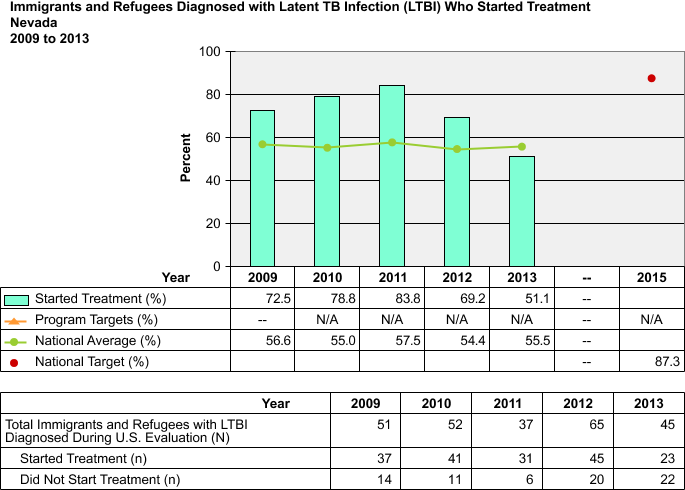
Percent of immigrants and refugees with a TB classification that complete an evaluation within 90 days of arrival

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **National Average** | **Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **Not Available** | **N/A – New variable** | **41%** | **42%** | **43%** | **44%** | **45%** | **45%** |

Discussion: The Electronic Data Notification System (EDN) system deployed in 2009 by the CDC’s Division of Global Migration and Quarantine (DGMQ) provides notices of arrivals in a timely manner, although, in many of our counties, the immigrants arrive to the clinics before the notices do. Nevada has been able to successfully complete evaluations in the prescribed period for a significant percentage of this population and continues to bolster our efforts to continue improvement. We do currently exceed the national average on this goal and expect to see similar results in future years.

**Objective 11.3: For immigrants and refugees with abnormal chest x-rays read overseas as consistent with TB and who are diagnosed with latent TB infection (LTBI) during evaluation in the U.S., increase the proportion who start treatment to 60%.**

Status: Unmet



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For:

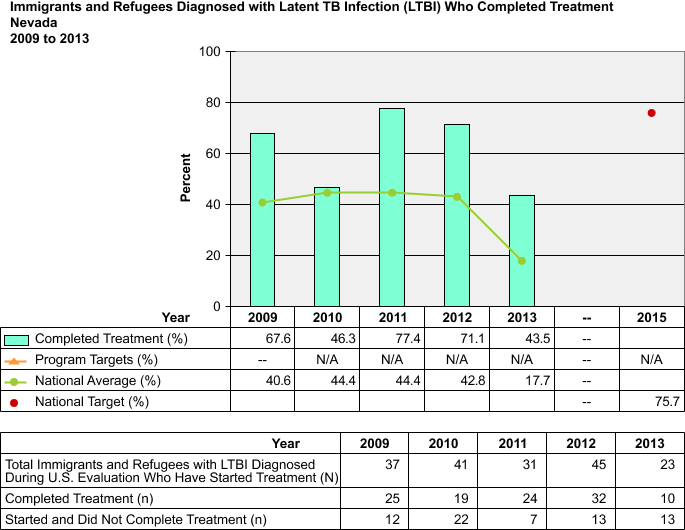
Percent of immigrants and refugees diagnosed with LTBI who start treatment

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **National Average** | **Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **Not Available** | **N/A – New variable** | **50%** | **52%** | **54%** | **56%** | **58%** | **60%** |

Discussion: In prior years Nevada has exceeded the national average on this goal and expects to see similar results in this year once all data is updated.

**Objective 11.4: For immigrants and refugees with abnormal chest x-rays read overseas as consistent with TB, and who are diagnosed with latent TB infection (LTBI) during evaluation in the U.S. and started on treatment, increase the proportion who complete LTBI treatment to 50%.**

Status: Unmet/Ongoing



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For:

Percent of immigrants and refugees diagnosed with and started on LTBI therapy who complete treatment regimen

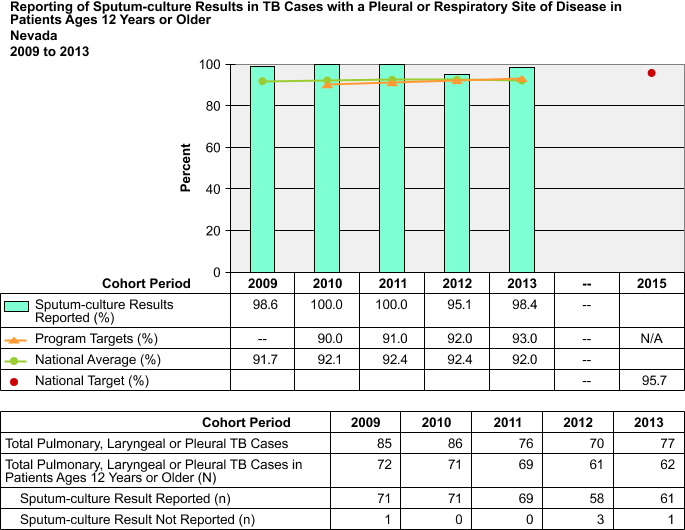
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **National Average** | **Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **Not Available** | **N/A – New variable** | **40%** | **42%** | **44%** | **46%** | **48%** | **50%** |

Discussion: The Local Health Authorities enter this information directly into the SDN- EDN through the worksheets. Nevada is well-above the national average on this objective.

**Goal 12: Increase Sputum-Culture Reported**

**Objective 12.1: Increase the proportion of TB cases with a pleural or respiratory site of disease in patients ages 12 years or older that have a sputum-culture result reported to 95.7%.**

Status: Met



National Tuberculosis Indicators Project (NTIP) Data as of March 09, 2014

Five Year Target Objectives For:

Percent of TB patients 12yr or older that have a sputum culture result reported

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2006-09 National Average** | **2006-09 Nevada Average** | **2010 Objective** | **2011 Objective** | **2012 Objective** | **2013 Objective** | **2014 Objective** | **2015 National Objective** |
| **91.5%** | **98.8%** | **90%** | **91%** | **92%** | **93%** | **94%** | **95.7%** |

Discussion: Nevada has consistently exceeded the 95.7% national target for this goal, and will continue to make our goal 100 percent completeness in result reporting.

**Goal 13: Improve Program Evaluations.**

**Objective 13.1: Increase program evaluation activities by monitoring program progress and tracking evaluation status of cooperative agreement recipients.**

Status: In Progress

Discussion:  The state controller actively oversees progress of all recipients and receives formal quarterly reports from all recipients in regards to their activites and status.

**Objective 13.2:**  **Increase the percent of cooperative agreement recipients that have an evaluation focal point.**

Status: Met

Discussion:  The state controller serves as the designated focal point for all counties and Co-Ag recipients in Nevada.

**Goal 14: Develop a Human Resource Development Plan.**

**Objective 14.1**: **Increase the percent of cooperative agreement recipients who submit a program-specific human resource development plan (HRD), as outlined in the TB Cooperative Agreement announcement, to 100.0%.**

Status: Met

Discussion:  All Co-Ag recipients provided HRD plans and reports during their quarterly site visits and those plans were evaluated through collaboration with the state controller to best support the needs of the TB program.

**Objective 14.2:**  **Increase the percent of cooperative agreement recipients who submit a yearly update of progress-to-date on HRD activities to 100.0%.**

Status: Met

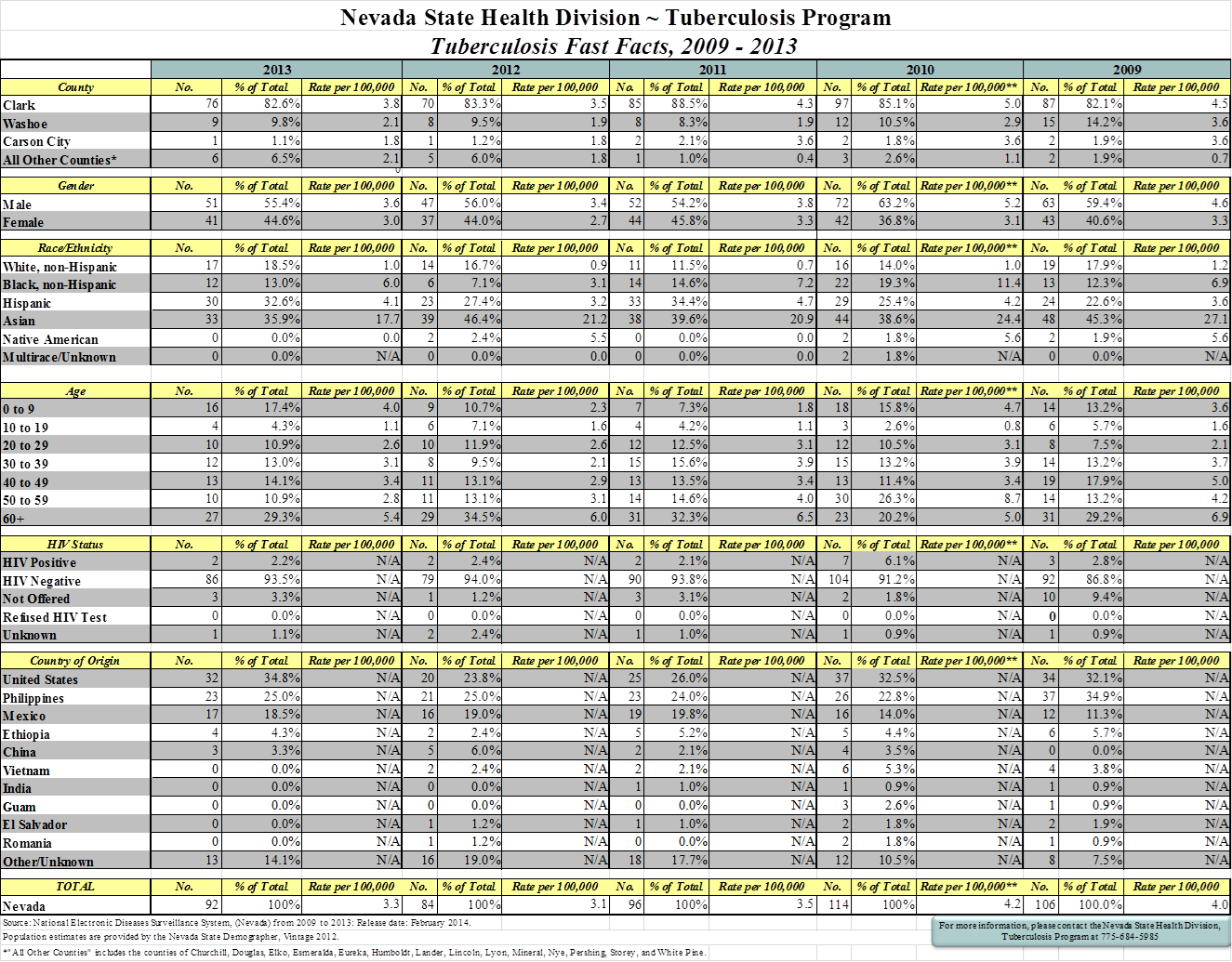
Discussion: The quarterly reports submitted to the state TB program by the subgrant recipients provide a narrative outlining HRD activities taking place for that region for each quarter. The Nevada program partners work closely together on HRD to ensure appropriate capacity building throughout the program.

**Goal 15: Training Focal Point.**

**Objective 15.1: Increase the percent of cooperative agreement recipients that have a TB training focal point.**

Status: Met

Discussion: The State Controller is the TB education and training focal point for Nevada and has submitted formalized plans to CDC to detail our priorities and strategic approaches to them.



NEVADA PUBLIC HEALTH LABORATORY

TB LAB 2013 TOTALS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 | TOTAL |
| **WORKLOAD DATA TEMPLATE** | **JAN FEB MAR** | **APR MAY JUN** | **JUL AUG SEPT** | **OCT NOV DEC** |  |
| **Total specimens processed (no isolate referrals)** | **401** | **379** | **408** | **436** | **1624** |
| **Total patients cultured** | **181** | **175** | **195** | **198** | **749** |
| **# pts positive for TB** | **24** | **16** | **15** | **10** | **65** |
| **# patient referrals (LJ, MGIT, etc)** | **19** | **30** | **22** | **13** | **84** |
| **# pt referrals positive for TB** | **6** | **5** | **3** | **2** | **16** |
| **# pts Sensitivity performed** | **20** | **19** | **20** | **11** | **52** |
| **# PCR performed** | **34** | **28** | **32** | **30** | **124** |
| **# PCR positive for TB** | **13** | **11** | **8** | **7** | **39** |
| **# TB sent for genotyping** |  |  |  |  | **75** |
| **TAT DATE TEMPLATE** |  |  |  |  |  |
| **# specimens rec’d within 24 hours** | **195 (48.6%)** | **181 (47.8%)** | **193 (47.3%)** | **213(48.9%)** | **782 (48.2%)** |
| **# specimens rec’d within 48 hrs** | **93 (23.1%)** | **87 (23.0%** | **107 (26.3%)** | **111 25.5%)** | **398 (24.5%)** |
| **#specimens rec’d within 72 hrs** | **113 (28.3%)** | **111 (29.2%)** | **108 (26.4%)** | **112(25.7%)** | **444 (27.3%)** |
| **% smears reported within 24 hrs** | **100%** | **99.73%** | **96.30%** | **98.1%** | **98.5%** |
| **% TB isolates reported within 21 days** | **100%** | **88.89%** | **93.8%** | **98.9%** | **97.9%** |
| **% susceptibilities reported within 28 days** | **80%** | **80%** | **42.87%** | **27.7%** | **57.6%** |
| **# pts TB confirmed within 48 hrs of receipt** | 11 | 11 | 8 | 7 | 37 |

**NEVADA STATE PUBLIC HEALTH LABORATORY**

**2014 TB LAB NARRATIVE**

**The Nevada State Public Health Laboratories Description of Activities-TB Laboratory**

We have addressed recommendations of the CDC Site Visit of April 2013. (items in bold type)

All specimens are processed the day of receipt, including weekends.

Two full time employees can doallphases of work in the TB Lab.

Three further employees are proficient at setting up cultures and reading smears.

**We now have a Lab Assistant (Lorrie Muir) to help with paperwork.**

All AFB smears are read and reported with 24 hours of processing.

First time AFB positive results are called and faxed to the submitting clinic or laboratory, the local county TB health department and NSHD Office of Epidemiology**. Negative results and preliminary reports are all faxed, to optimize reporting.**

The Cepheid GenXpert which detects Mtb and rifampin resistance is used on first time positive smear samples and on positive samples that have been processed at various hospitals and commercial laboratories throughout the state **at their request.** “Non clinical selection criteria for maximizing yield of nucleic acid amplification tests in tuberculosis diagnosis”, Han LL, Elvin P, Bernardo j.,J Clin Microbiol., 2012 Aug; 50(8):2592-5 Epub 2012 May 23.

The initial processing of specimens for isolation of M. tuberculosis include MGIT broth, 7H11 plates, the Bactec 960 and Auramine-Rhodamine fluorescent stain. Both broth and solid culture media are incubated for six weeks. Positive MGIT broths are stained and Accuprobes are performed Tuesdays and Thursdays to identify the isolated AFB. First time AFB positive results are called and faxed to the submitting clinic or laboratory, the local county TB health department and NSHD Office of Epidemiology. All other results are faxed .

Genprobe Accuprobes will identify MTBC ,MAIC, M.gordonae and M.kansasii.

Once organisms are identified as belonging to the MTBC they receive a susceptibility panel which includes**;** 2 concentrations of Isoniazid, Ethambutol, Pyrazinamide and Rifampin. **Streptomycin has been removed from our panel.**

**Agar proportion is not performed inhouse, second line drug susceptibility, or confirmation of resistance is sent to the CDC MDDR Lab. A preliminary report states the resistance and notes that further testing is in progress.**

We have one module for Genexpert, we could use two for faster turnaround when multiple samples come in. We have received up to 6 requests in one day.

**Jaime and Christine attend Patricia Townsend’s Monthly State meetings on the second Wednesday of each month.**

We have completed the Jan 2014 MPEP proficiency.

We have completed the Wisconsin Public Health Lab proficiency for the Genexpert (5 samples) Feb 2014.

We have a manual **“Performance Indicators for the TB Laboratory” with pertinent information for calculating performance and TAT’s, with copies of our MPEP, CAP and WSPHL proficiency reults.**

Our Genotyping submission times are above the national average.

An employee would like to attend AnnualTB Conference in June of this year in Atlanta.

Monthly and Quarterly TB statistics are run for volume and turnaround time calculations and sent to Patricia Townsend and Stephanie VanHooser.

**We have implemented new methods for contamination rate statistics to include plated media, liquid media and finalized specimens reported as “Contaminated”.**

We have updated our procedure manuals to address any changes.