

National Tuberculosis Indicators

2013 STATE COMPARISON

The Centers for Disease Control and Prevention (CDC) collects information from state and local health departments about each newly reported case of tuberculosis (TB) in the United States (U.S.). Reporting areas (i.e., the 50 states, the District of Columbia, several large U.S. cities, Puerto Rico, and other U.S. jurisdictions in the Pacific and Caribbean) submit their information about TB cases to CDC's National TB Surveillance System (NTSS) with a standard form, the Report of Verified Case of Tuberculosis (RVCT). The initial case report includes a patient's demographic data, occupation, initial drug regimen, and information on HIV status, substance abuse, homelessness, and residence in correctional or long term-care facilities. Follow-up reports collect drug susceptibility test results for *Mycobacterium tuberculosis* isolates and the reason therapy was stopped, among other items.

CDC also collects information from reporting areas about their contact investigation activities: finding and examining persons who have had contact with TB cases, and treating those found to have TB disease or latent TB infection. Each TB control jurisdiction reports aggregate contact investigation data annually through the Aggregate Reports for Program Evaluation (ARPE).

National TB Indicators are key process and outcome measures for TB control programs in the U.S. These indicators are selected by CDC in cooperation with partners

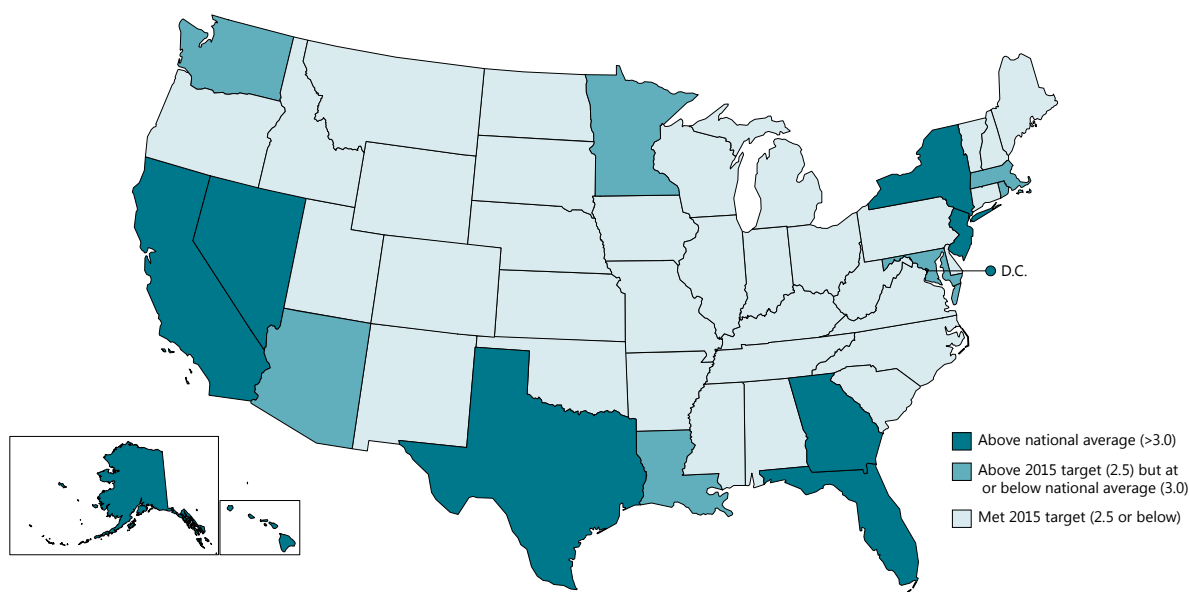
in state and local health departments. Data for calculating these indicators are derived from existing surveillance systems such as NTSS and ARPE and reported back to the programs to assist in evaluating progress toward achievement of national objectives.¹ TB indicators, such as those highlighted in this report, are used to monitor TB program performance, assess needs for education and technical assistance, and identify areas that need improvement to accelerate the decline in TB incidence.

For more information, visit the National TB Controllers Association website at: <http://www.tbcontrollers.org> and the CDC TB website at: <http://www.cdc.gov/tb>.

Case Rates

Elimination of TB is defined by reducing TB disease incidence in the U.S. to less than 1 case per million persons per year. Therefore, measuring the number of new cases occurring each year remains the best overall indicator of progress toward TB elimination. In 2013, the TB incidence rate in the U.S. was 3.0 cases per 100,000 (30 per million). Nine states and the District of Columbia reported case rates above the national average of 3.0 cases per 100,000. Case rates in 41 states were at or below the national average of 3.0 cases per 100,000. Overall, TB case rates continue to decline, but the nation has not yet achieved the 2015 national target of ≤ 2.5 cases per 100,000. (See Figure 1).

Figure 1. United States TB Case Rates (cases per 100,000), 2013



¹Data in this report are based on the Frozen 2013 Dataset from the National TB Indicators Project (NTIP).

In 2013, a total of 24 states met the 2015 national target of ≤ 0.7 cases per 100,000 U.S.-born persons; 11 states were short of the 2015 target, but reported case rates less than the national average of 1.2 cases per 100,000 U.S.-born persons. (See Figure 2).

In 2013, a total of 22 states met the 2015 national target of ≤ 14.0 cases per 100,000 foreign-born persons; 6 states were short of the 2015 target, but still reported case rates of less than the national average of 15.4 cases per 100,000 foreign-born persons. (See Figure 3)

Figure 2. United States TB Case Rates (cases per 100,000) for U.S.-Born Persons, 2013¹

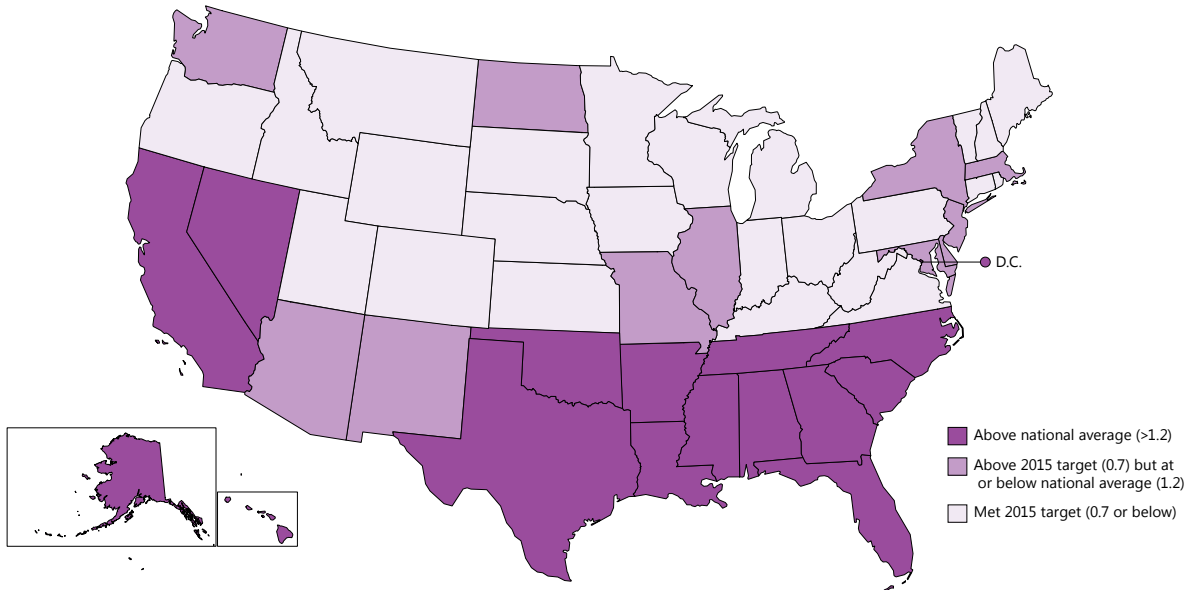
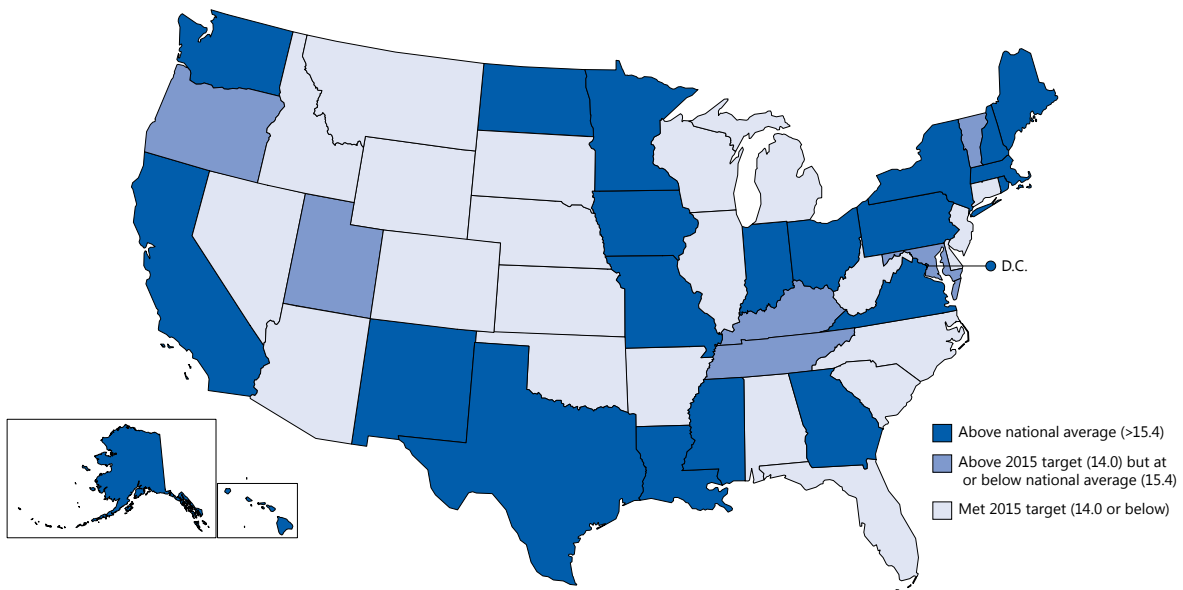


Figure 3. United States TB Case Rates (cases per 100,000) for Foreign-Born Persons, 2013¹



¹To ensure better consistency with annual published TB case rates, U.S and foreign-born state case rates included in this report were calculated using the U.S. Census Bureau's Current Population Survey. Therefore, U.S. and foreign-born state case rates presented in this report may differ from U.S. and foreign-born state case rates calculated using population data from other sources, such as the American Community Survey.

Completion of Therapy

Fully treating and, therefore, preventing further spread of *Mycobacterium tuberculosis* is key to TB control and elimination. If TB drugs are stopped too soon or not taken correctly, a person may become sick again or drug resistance may develop, enabling the further spread of TB. Each patient is unique, and there are many reasons why a patient might be unable or unwilling to complete TB treatment such as resolution of symptoms, not fully understanding the treatment regimen, cultural beliefs, language barriers, lack of access to health care, homelessness, substance abuse, or mental health issues. There are several ways to increase treatment completion. These include directly observed therapy (in which patients are observed to ingest each dose of antituberculosis medications) and use of incentives and enablers.

In 2011, a total of 12 states met or performed better than the 2015 national target of $\geq 93\%$ of TB cases completing a full treatment regimen in 12 months or less; 14 states were short of the 2015 target, but performed better than the national average (89%). ([See Figure 4 on page 4](#)).

HIV Status

People living with HIV are more likely than others to become sick with TB if they are exposed and become infected. The risk of death from TB is also higher in HIV-infected persons. Untreated latent TB infection (see below) may quickly progress to TB disease in people living with HIV because the immune system is already weakened. And without treatment, TB disease can progress from sickness to death rapidly. Measuring the number of TB patients who are also tested for HIV and have a known HIV status is not only important in terms of saving lives, but also in interrupting the spread of TB and HIV to others.

In 2013, a total of 26 states and the District of Columbia performed above the national average (88.5%) and met the 2015 national target of having HIV status known among at least 88.7% of reported TB cases. ([See Figure 5 on page 5](#)).

Treatment for Latent Tuberculosis Infection

When a person with infectious TB coughs or sneezes, droplet nuclei containing *M. tuberculosis* are expelled into the air. If another person inhales air containing these droplet nuclei, he or she may become infected. However, not everyone infected with TB bacteria becomes sick. As a result, two TB-related conditions exist: latent TB infection and TB disease. Persons with latent TB infection do not feel sick and do not have any symptoms. They are infected with *M.*

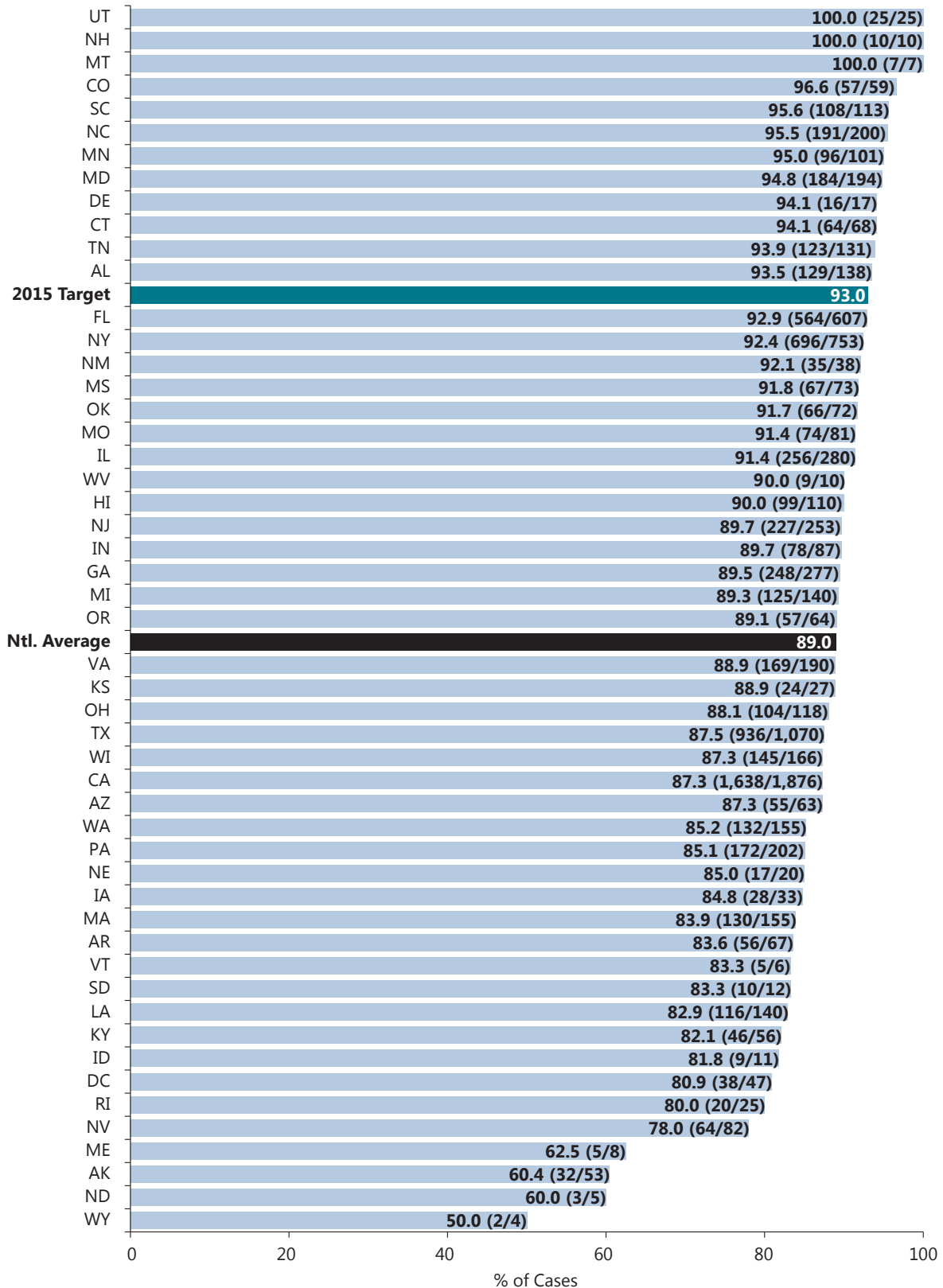
tuberculosis, but do not have TB disease. The only sign of TB infection is a positive reaction to the tuberculin skin test or TB blood test. Persons with latent TB infection are not infectious and cannot spread TB infection to others. However, at some point in their lives, 5–10% of all people with normal immune systems who have latent TB infection will become sick with TB disease. As previously described, the chances of progression from latent TB infection to TB disease are higher for persons with weakened immune systems, such as those infected with HIV. Latent TB infection can be treated to prevent progression to TB disease. Thus, it is important, in terms of accelerating the decline in TB incidence, to measure how many people with latent TB infection begin and complete treatment.

TB programs use targeted testing to select, examine, and treat persons who are at high risk for TB infection or at high risk for getting sick with TB once infected. High-risk persons include known close contacts of someone with infectious TB disease, persons from regions of the world with high TB incidence, and those who work or reside in facilities or institutions with people who are also at high risk for TB. Risk factors for developing TB disease once infected include HIV infection, injection drug use, evidence of prior healed TB, and low body weight. Infants and children under the age of five years are also at higher risk of getting sick with TB disease once infected.

In 2011, a total of 10 states met or performed better than the 2015 national target of initiating treatment for $\geq 88\%$ of people diagnosed with latent TB infection found during contact investigations; 25 states were short of the 2015 target, but performed better than the national average (69.9%). ([See Figure 6 on page 6](#)).

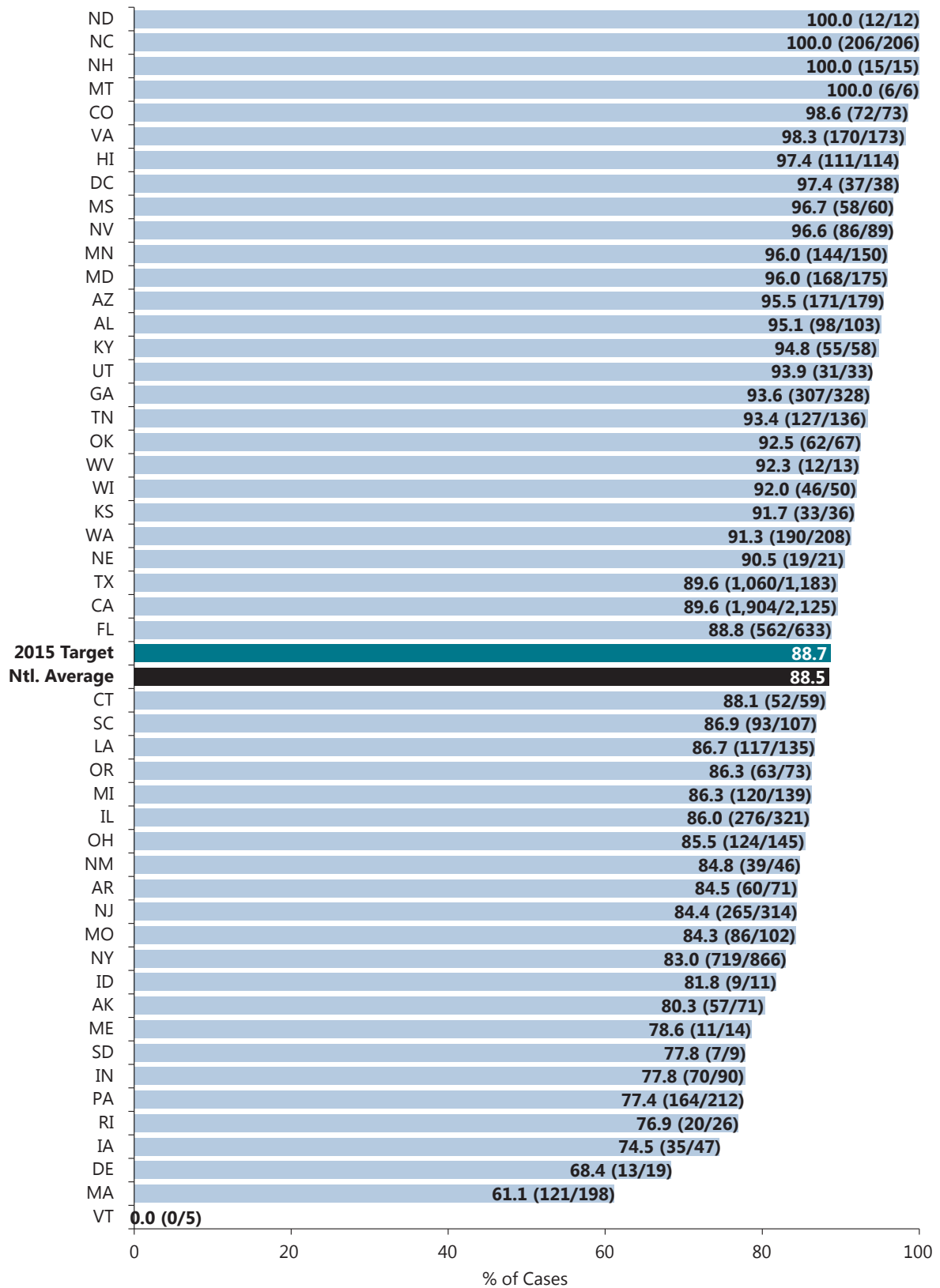
In 2011, a total of 15 states met or performed better than the 2015 national target of treatment completion for $\geq 79\%$ of people diagnosed with latent TB infection through contact investigation; 14 states were short of the 2015 target, but performed better than the national average of (67.0%). ([See Figure 7 on page 7](#)).

Figure 4. Newly Diagnosed TB Cases Completing Treatment within 12 Months or Less, United States, 2011^{1,2}



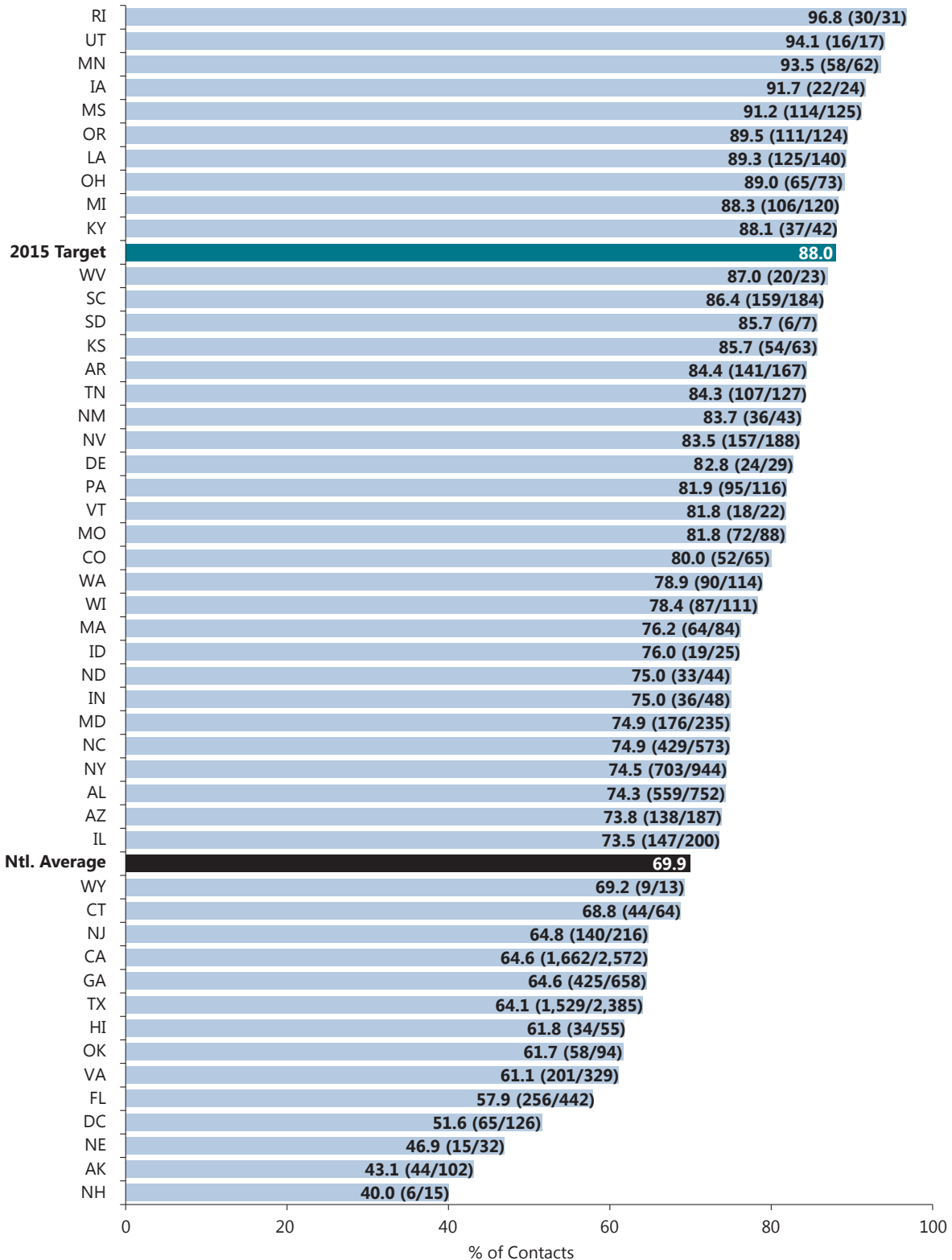
¹DC, DE, IA, ID, KS, ME, MT, ND, NE, NH, NM, RI, SD, UT, VT, WV, and WY reported 50 or fewer TB cases in 2011. Due to the small denominator, data should be interpreted with caution. ²The fraction in each parenthesis reports the number of TB patients who completed treatment within 12 months out of the total number of patients who were eligible to complete treatment within 12 months.

Figure 5. TB Cases with Known HIV Status (positive or negative), United States, 2013^{1,2,3}



¹DC, DE, IA, ID, KS, ME, MT, ND, NE, NH, NM, RI, SD, UT, VT, WV, and WY reported 50 or fewer TB cases in 2013. Due to the small denominator, data should be interpreted with caution. ²The fraction in each parenthesis reports the number of TB cases with known HIV status (either positive or negative HIV test results) out of the total number of TB cases. ³WY reported zero cases of TB in 2013.

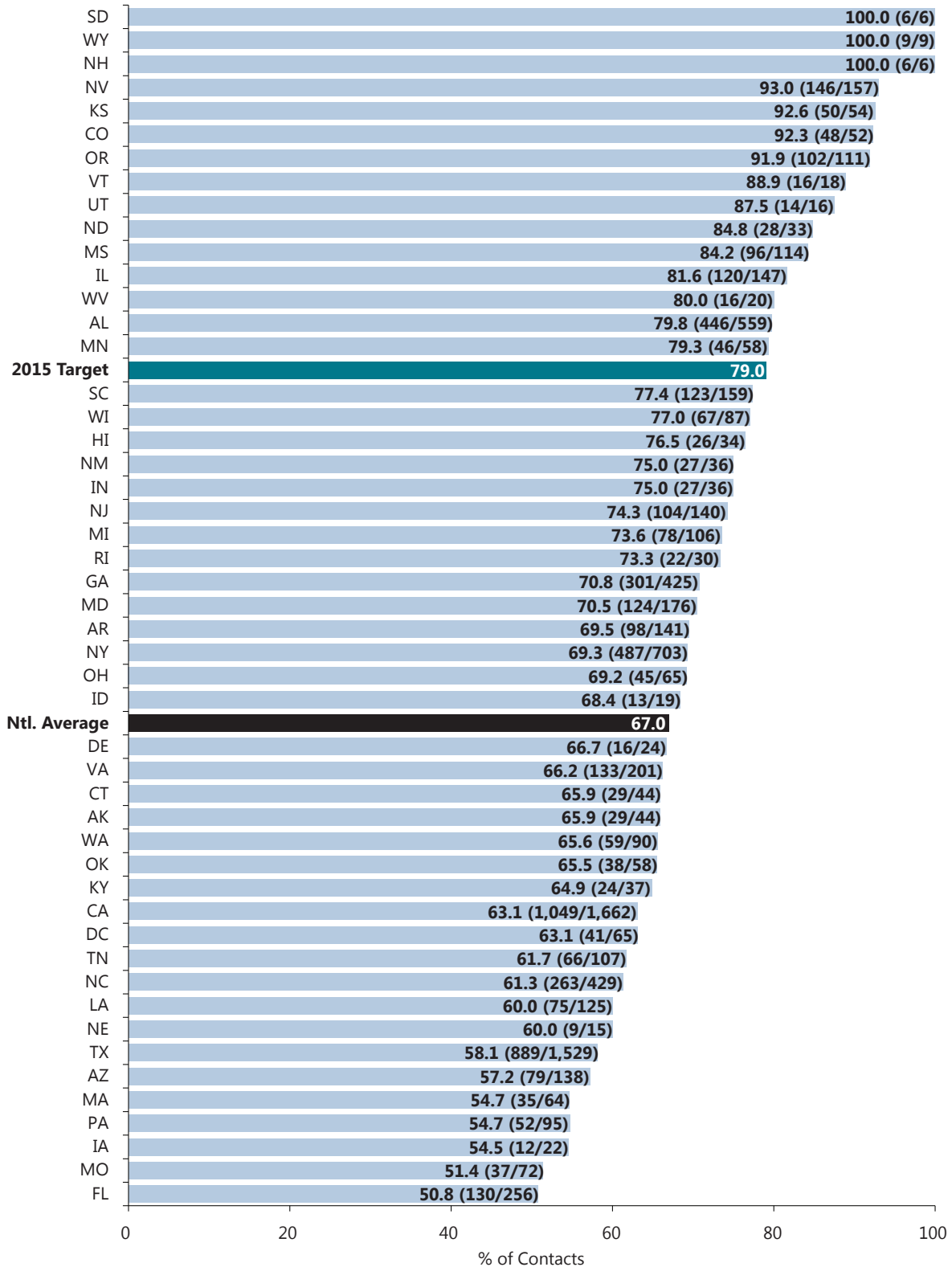
Figure 6. Contacts (to Sputum AFB Smear-Positive TB Patients) Newly Diagnosed with Latent TB Infection Who Began Treatment, United States, 2011^{1,2,3}



¹The fraction in each parenthesis reports the number of contacts who started treatment out of those contacts newly diagnosed with TB infection.

²MT and ME reported zero contacts diagnosed with TB infection. ³Due to the small denominator, data should be interpreted with caution.

Figure 7. Contacts (to Sputum AFB Smear-Positive TB Patients) Newly Diagnosed with Latent TB Infection Who Completed Treatment, United States, 2011^{1,2,3}



¹The fraction in each parenthesis reports the number of contacts who completed treatment out of those contacts with newly diagnosed TB infection who started treatment. ²MT and ME reported zero contacts diagnosed with TB infection. ³Due to the small denominator, data should be interpreted with caution.