

A Call for Action on the
**Tuberculosis
Elimination Plan for
the United States**



Tuberculosis
Elimination Plan
Committee



A Call for Action on the Tuberculosis Elimination Plan for the United States was developed by the Stop TB USA TB.



The National TB Controllers Association generously provided funding for the graphic design work on this publication.

Disclaimer:

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the organizations of the consultants or writers.

Suggested Citation:

Stop TB USA TB Elimination Plan Committee. *A Call for Action on the Tuberculosis Elimination Plan for the United States*. Atlanta, GA: Stop TB USA; 2009.

Contact Information:

Randall Reves, MD

Email: Randall.Reves@dhha.org

Telephone: (303) 602-7257

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Acknowledgements

A Call for Action on the Tuberculosis Elimination Plan for the United States was developed by the Stop TB USA TB Elimination Plan Committee with guidance from consultants and feedback from reviewers representing key stakeholders. We would like to acknowledge the contributions made during the development of this document by the following individuals.

Writing Committee

- John Bernardo, MD, Tuberculosis Control Center, Massachusetts Department of Public Health, Boston, MA
- Alex Bowler, MPH, FACHE, Wyoming State Department of Health, Cheyenne, WY
- Fran DuMelle, MS, American Thoracic Society, Washington, DC
- Sue Etkind, RN, MS, Massachusetts Department of Public Health, Jamaica Plain, MA
- Heather Ignatius, MA, Global Alliance for TB Drug Development, New York, NY
- Jennifer Kanouse, MA, Francis J. Curry National TB Center and National TB Controllers Association, San Francisco, CA
- L. Masae Kawamura, MD, San Francisco Department of Public Health, San Francisco, CA
- Michael Lauzardo, MD, Southeastern National TB Center, Gainesville, FL
- Ellen Murray, RN, BSN, Southeastern National TB Center, Gainesville, FL
- Charles M. Nolan, MD, Public Health/Seattle, Seattle, WA
- Sue Perez, MPH, Treatment Action Group (TAG), Washington, DC
- Carol J. Pozsik, RN, National TB Controllers Association, Smyrna, GA
- Randall Reves, MD, MSc, Denver Metro Tuberculosis Control Program, Denver, CO
- John Seggerson, Stop TB USA, TB Coalition, Atlanta, GA
- Stephanie Seidel, Global Alliance for TB Drug Development, New York, NY
- Charles Wallace, MPH, PhD, Texas Department of Health, Austin, TX
- Ed Zuroweste, MD, Migrant Clinicians Network, Austin, TX

Consultants

- Jose Becerra, MD, U.S. Centers for Disease Control and Prevention, Division of TB Elimination, Atlanta, GA
- Kashef Ijaz, MD, MPH, U.S. Centers for Disease Control and Prevention, Division of TB Elimination, Atlanta, GA

- Dolly Katz, PhD, U.S. Centers for Disease Control and Prevention, Division of TB Elimination, Atlanta, GA
- Mark N. Lobato, MD, U.S. Centers for Disease Control and Prevention, Division of TB Elimination, Atlanta, GA
- Suzanne Marks, MPH, MA, U.S. Centers for Disease Control and Prevention, Division of TB Elimination, Atlanta, GA
- Lisa Pascopella, PhD, MPH, California Department of Public Health, Richmond, CA
- Diana Schneider, DrPH, MA, U.S. Immigration & Customs Enforcement, Division of Immigration Health Services, Washington, DC
- Stephanie S. Spencer, MA, TB Control Branch, California Department of Public Health
- Wanda Walton, PhD, Med, U.S. Centers for Disease Control and Prevention, Atlanta, GA

Reviewers

- Charles L. Daley, MD, National Jewish Health, Denver, CO
- Edward Desmond, PhD, California Department of Public Health, Richmond, CA
- Michael E. Fleenor, MD, MPH, Jefferson County Department of Health, Birmingham, AL
- Cynthia C. Lee, MA, TBTC Community Research Advisory Group and Columbia University in Affiliation with Harlem Hospital Center, New York, NY
- Michael K. Leonard, MD, Emory University School of Medicine, Atlanta, GA
- Kathleen S. Moser, MD, MPH, San Diego County Health and Human Services TB Control Program, San Diego, CA
- Ann W. Mosher, MPH, FNP-BC, Duke University Medical Center, Durham, NC
- John T. Redd, MD, MPH, FACP, US Indian Health Service, Albuquerque, NM
- Max Salfinger, MD, Florida Department of Health, Tallahassee, FL
- Silvino V. Simsiman, BS, MBA, TBTC Community Research Advisory Group and Filipino-American Community of Colorado, Denver, CO
- Rachel L. Stricof, MPH, CIC, New York State Department of Health, Albany, NY
- Beth Weaver, DO, MPH, Hillsborough County Sheriff's Office, Tampa, FL
- Thomas M. Weiser, MD, MPH, Portland Area Indian Health Service, Portland, OR
- Jennifer Woolley, MSW, Aeras Global TB Vaccine Foundation, Rockville, MD

Graphic Design

- Edi Berton Design

I. Executive Summary

A. Reasons for Issuing this Call to Action in 2009

In 2000, the Institute of Medicine (IOM) published a 269-page report, *Ending Neglect: The Elimination of Tuberculosis in the United States*, detailing the history of efforts to control and eliminate tuberculosis (TB) in the United States and recommending a plan to eliminate TB in the United States by 2035. In late 2007, Stop TB USA assembled a TB Elimination Plan Committee (the Committee) to assess the progress over the eight years since the release of the IOM report and to formulate recommendations to update the IOM plan. This report provides an assessment of why the IOM's TB elimination plan is failing and provides updated action plans for accelerating TB elimination in the United States. The Committee proposes the development of new timelines and interim goals for TB elimination along with periodic review of progress toward meeting those goals.

Eight years after the IOM report, we find that the IOM recommendations for accelerating the decline have not been fully implemented and that the annual decline in TB case rates has slowed to only 3.8% per year since 2003. If this trend continues, it will take 96 years to achieve TB elimination, defined as a case rate of less than one per million population. This is clearly a goal well below the horizon from a human perspective in 2008. Placed in the context of affected individuals today, only 300 newly reported TB cases would have been expected in the entire U.S. population of 300 million if TB elimination had been achieved. Instead, over 13,000 TB cases were reported in each of the last four years.

A major health disparity exists for TB. Only 17% of TB cases in the United States are now reported in the majority non-Hispanic white population. Compared to reported TB case rates among non-Hispanic whites, the rates are 5.9-fold higher among American Indians, 8.5-fold higher among Hispanics, 9.4-fold higher among blacks, and 24-fold higher among Asians.

The failure to progress towards TB elimination in the United States results in ongoing preventable life-threatening illnesses, deaths, disability, and loss of productivity, particularly in minority populations. TB remains a deadly disease with over 1,200 of the annual reported cases having died either before diagnosis or before completing treatment ⁽¹⁾. Among survivors, the health impact remains significant. Over half of the survivors of pulmonary (lung) TB are left with significant lung impairment ⁽²⁾.

TB has a strong economic impact. Prolonged short-term disability due to illness and isolation for public health protection impacts patient and family income. Treating each active TB patient is expensive, with about 50% of patients hospitalized at a cost of \$19,000, and outpatient directly observed treatment costs of \$4,000 (2004 dollars) ⁽³⁾

Detecting TB is also expensive, in part due to the failure to develop and implement improved diagnostic tools. For each confirmed case, nearly ten individuals are evaluated for suspected TB but determined not to have TB. Ruling out one suspected TB case costs an estimated \$16,830 in medical and public health costs per confirmed TB case ⁽⁴⁾.

Two key recent surveys conducted by the National TB Controllers Association (NTCA) and National Tuberculosis Nurse Coalition (NTNC) indicate erosion of TB control infrastructure and impending loss of expertise. The NTCA survey focused on resources for TB control activities from 2006 through 2008. Twenty-seven respondents represented 24 states, three big cities, and 44% of the total reported cases in the U.S. reported that the most common barrier to reaching the national objectives for TB control was due to underfunding (81%). Estimates on needed funding ranged from \$13,000-\$99,000 for eight programs (33%), \$100,000-\$399,000 for eight programs (33%), \$400,000-\$1.5 million for six programs (25%), to \$2-2.2 million for two programs (8%). The NTNC survey noted an impending loss of TB case management expertise as 33% and 74% of current TB case managers anticipate retirement within 5 and 10 years, respectively. This loss of key infrastructure comes at a time when TB nursing case managers report increasing case complexity due to drug resistance (multidrug-resistant and extensively drug-resistant TB), co-morbid conditions, and greater linguistic and cultural diversity. These surveys verify the needed augmentation and investments in domestic TB programs.

Further, due to decades of stagnation in research and development for TB, few modern tools have been introduced for the diagnosis, treatment, and prevention of the disease. With the emergence of multidrug-resistant and extensively drug-resistant strains, TB has become much more expensive and difficult to diagnose and treat. In the United States, the average estimated hospitalization cost for treating a patient with extensively drug-resistant TB is \$483,000, and that does not include outpatient care and related public health department intervention costs. The global spread of drug-resistant TB strains, particularly in human immunodeficiency virus (HIV) co-infected populations living in countries with high TB burdens but poorly functioning TB control programs, poses a growing threat to U.S. residents.

Despite this dire assessment of current progress, the committee views the elimination of TB in the United States, first proposed in 1989 and reaffirmed by the IOM in 2000, as a worthy and achievable goal if we accept the challenge.

The authors of the IOM's *Ending Neglect* report stated that the 2010 TB elimination goal proposed in 1989 could not be achieved, owing in part to the 1985-1992 resurgence of TB in the United States as well as to the global impact of the pandemic. The IOM report suggested that the elimination of TB might be feasible by 2035 if a number of recommendations for accelerating the decline in TB cases were implemented.

Given the trends since 2003, the decline in TB case rates will have to be dramatically increased if TB elimination is to be achieved by 2035. The benefits of eliminating TB by 2035 instead of maintaining the current rate of decline: 253,000 fewer TB cases and 15,200 fewer TB-related deaths, and \$1.3 billion less in treatment costs (S. Marks, unpublished data, 2009).

Acceleration of the timeline for TB elimination will require implementation of the recommendations made in 2000 by the IOM in *Ending Neglect*. Preventing the ongoing accumulation of deaths, disability, healthcare costs, and loss of family income will require the full participation at local, state, and federal levels by policy makers, the public health sectors, medical practitioners, professional societies, community-based organizations, and voluntary organizations. Greatly increased political will to implement the 2000 recommendations will be needed in any fiscal climate, and advocacy partnerships are even more important to maintain focus on the goal of eliminating TB in recessionary times.

B. Purpose of this Call to Action

This update of the TB elimination plan for the United States is intended to serve as a basis for national organizations to set new interim goals and to implement specific action plans for accelerating TB elimination. These include:

- Consensus-building, advocacy, and mobilization
- Acceleration of the development of new tools for diagnosis, prevention, and treatment
- Implementation of strategies to reach high-risk segments of the U.S. population

The Stop TB USA Tuberculosis Elimination Plan Committee has drafted this update and based it upon the following documents that explain national guidelines and strategies that will need to be implemented for TB elimination to be accomplished in the United States:

- Centers for Disease Control and Prevention. A strategic plan for the elimination of tuberculosis in the United States. *MMWR* 1989;38:269-272. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/00001375.htm>
- Centers for Disease Control and Prevention. Tuberculosis elimination revisited: obstacles, opportunities, and a renewed commitment—Advisory Council for the Elimination of Tuberculosis (ACET). *MMWR* 1999;48 (No. RR-09):1-13. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4809a1.htm>
- Institute of Medicine. *Ending Neglect: The Elimination of Tuberculosis in the United States*. Washington, DC: Institute of Medicine, National Academy Press; 2000. Available at: <http://www.iom.edu/?id=12679>
- Centers for Disease Control and Prevention. Progressing toward tuberculosis elimination in low-incidence areas of the United States. *MMWR* 2002;51 (No. RR-5):1-16. Available at: <http://www.cdc.gov/mmwr/PDF/rr/rr5105.pdf>
- American Thoracic Society, Centers for Disease Control and Prevention, Infectious Diseases Society of America. Controlling tuberculosis in the United States: recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. *MMWR* 2005;54 (No. RR-12):1-81. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5412a1.htm>

C. Progress Assessment Summary

In its 2000 report, *Ending Neglect*, the IOM recommended that five specific goals be targeted in order to eliminate TB in the United States. Table 1 summarizes the current status of progress on these goals.

TABLE 1

Success in Meeting Institute of Medicine Goals		
Institute of Medicine Goal	Success	Comments
1. Maintain control of TB while adjusting to declining incidence.	Yes	There has been continuing decline in TB incidence since 1993.
2. Accelerate the rate of decline of TB by increasing efforts at targeted testing and treatment for latent TB infection.	No	The decline in TB rates is slowing, not accelerating. The treatment of latent TB infection remains largely limited to public health departments and has not been expanded by other medical care providers to the level required for TB elimination.
3. Develop the new diagnostic, treatment, and prevention tools that will be necessary for the ultimate elimination of TB.	Yes/No	Research on new tools has expanded significantly since 2000, but product development pipelines are still meager compared with research and development activity seen in other disease areas. Additionally, operational research needed to bring about widespread implementation by public health departments, other healthcare facilities, and laboratories is dwindling.
4. Increase the involvement of the United States in global TB control.	Yes	Yearly U.S. Agency for International Development (USAID) funding for global TB control has increased from \$72 M to \$162 M from 2002 to 2008. TB-HIV funding accounts for 4% of the total PEPFAR total program budget.
5. Mobilize and sustain public support for elimination; measure progress toward the goal.	Yes/No	There are ongoing efforts to mobilize public and political support, but success is only modest.

The continued decline in case rates provides evidence that TB remains under control, but the acceleration of TB elimination that the IOM anticipated with the implementation of Goals 2-5 (Table 1) has not occurred. Treatment of latent TB infection is a TB prevention strategy that is critical to achieve TB elimination. Expansion of the treatment of latent TB infection has not occurred and remains limited in public health departments where it is considered low priority when resources are scarce. The lack of an effective, safe, and affordable short-course treatment regimen has severely limited expansion of treatment for latent TB infection.

The 2006 TB case rates, reported new active TB cases per 100,000 persons per year, are shown in Table 2 for the overall total U.S. population. The rate of 4.6 per 100,000 population is equivalent to 46 per million population, 46-fold higher than one per million, the definition of TB elimination. Also shown are the average annual percentage changes in TB case rates over 2003 to 2007 for the total U.S. population and subsets by birthplace and race/ethnicity. Projecting these trends forward leads to an estimated requirement of 96 years to reach the TB elimination goal of one case per million for the entire U.S. population.

A major contribution to this estimate is the higher rate and slower annual decrease among foreign-born persons, projected to require 138 years for TB elimination.

TABLE 2

Projected Years for TB Elimination: Based on 2003–2007 Rates per 100,000 per year			
	2006 Rate	% Change	Projected Year
U.S. Total	4.6	-3.8	2104 (96)
U.S.-born	2.3	-5.9	2058 (50)
Foreign-born	21.7	-3.8	2146 (138)
Non-Hispanic White	1.2	-4.7	2058 (50)
Non-Hispanic Black	10.3	-4.2	2115 (107)
Non-Hispanic Asian	17.8	-4.6	2116 (108)
Hispanic	9.3	-2.8	2163 (155)

Provided by R. Pratt, T. Navin, M. Chen, J. Becerra, CDC

Racial/ethnic minority populations (blacks, Asians, and Hispanics) continue to be disproportionately affected by TB in the United States. TB elimination in racial/ethnic minority populations is projected to take over 100 years. The rates and year of projected TB elimination by ethnic and racial groups are to varying degrees confounded by foreign birth, with foreign-born persons accounting for 94% and 75% of cases among Asian and Hispanic residents respectively. Foreign-born persons make up 25% of TB cases reported among black persons, an increase from 5% in 1993.

D. Recommendations for Action

The TB Elimination Plan Committee has developed a set of general recommendations for action on national, local, and/or state levels and that apply to all U.S. communities and populations. Other recommendations were developed for the specific populations of U.S.-born and foreign-born individuals to address the risk factors and/or interventions that are either unique or more important for those individuals. In addition, the challenges of providing TB services in states with low TB case burdens have been a subject of discussion and research, and this document provides updated plans for action to accelerate TB elimination in areas with low incidences of TB.

1. General Recommendations for Action

The general recommendations reflect important roles that must be played by federal, state, county, and municipal agencies as well as other local and national organizations if TB elimination is to be successful.

TABLE 3

General Recommendations for Action to Accelerate Tuberculosis Elimination in the United States

1. The Division of TB Elimination of the Centers for Disease Control and Prevention (CDC) should receive increased funding to fulfill its responsibilities in accelerating TB elimination. These include oversight, guideline development, updating model TB control laws, consultation, financial assistance, and technical support.
 2. The Division of TB Elimination should receive additional funding in order to accelerate the operational research studies needed to evaluate and implement better tools for the diagnosis and treatment of latent TB infection.
 3. Municipal, county, and state officials should ensure the provision of timely access to high-quality public health services for the diagnosis, treatment, and prevention of TB cases and outbreaks among their residents. Effective and just TB control laws and regulations should be maintained.
 4. Private and public healthcare providers, community health centers, hospitals, academic medical centers, professional medical organizations, correctional care facilities, and long-term care facilities should engage in providing quality diagnostic and treatment services for individuals with TB and in the treatment of latent TB infection to prevent future TB cases.
 5. Community leaders and community-based organizations serving individuals at increased risk of TB must engage in overcoming challenges faced by their clients in eliminating the threat of TB for them, their families, and their communities.
-

2. New Tools

TB control in the United States has been maintained over the past two decades by emphasis on detection and treatment of active TB cases and evaluation and treatment of contacts. These top-priority activities must be done well, but, as pointed out in the IOM report, acceleration of TB elimination will require additional resources and tools to expand the treatment of latent TB infection. TB elimination will require much more rapid development, evaluation, and implementation of new tools to accelerate the rate of decline, particularly with the recent trends of stagnation.

TABLE 4

Action Plans to Accelerate New Tools Development

1. TB research and development investment must increase four-fold, to \$2 billion per year, and cover the full pipeline of research activities: basic research to understand the relationship between the bacillus and the host; discovery research to identify possible candidates; preclinical and clinical testing to evaluate the safety and efficacy of new diagnostics, drugs, and vaccines; and operational research to optimize the use of currently available and new products.
 - The National Institutes of Health (NIH) should increase its support for basic and discovery research and product development. To address scientific barriers, basic research must be intensified and platform technologies must be established to facilitate research and development across all new tools.
 - The Centers for Disease Control and Prevention's (CDC's) Division of Tuberculosis Elimination plays an important role in TB clinical and operational research as reflected in recent authorizing legislation. Appropriations and funding decisions must support the Division's role in ensuring that promising tools can be further developed and translated into practice.
 - The U.S. Agency for International Development (USAID), in support of clinical evaluation and introduction of new diagnostics and drugs for use in developing countries, is authorized to expand its current TB research and development funding and initiate new funding for vaccine development. Appropriations and funding decisions must support this enhanced authority in vaccine development while continuing its investment in new diagnostics and drugs.
 - Governments, foundations, and the private sector must accurately track and transparently report TB research and development investments to ensure that funding gaps are addressed.
2. Stop TB USA, partners, and stakeholders must intensify advocacy efforts to educate policy makers about the critical role of government funding for TB research and in the development of new diagnostics, drugs, and vaccines must be intensified.

Much greater social mobilization will be required to implement the measures needed to eliminate TB. In order to create this social mobilization, Stop TB USA, other stakeholders, and partners (including professional and voluntary organizations) must increase and maintain public awareness of the ongoing threat posed by TB.

3. U.S.-born Populations

Compared to foreign-born persons with TB, U.S.-born persons with TB are more likely to have been homeless, to have reported abuse of alcohol or other substances, to be diagnosed in correctional care or long-term care facilities, and to have HIV infection. These observations are particularly important for individuals belonging to minority populations and lead to specific actions needed to accelerate TB elimination in U.S.-born populations.

TABLE 5

Action Plans for Tuberculosis Elimination among the U.S.-born

Local, State, and Federal Government

1. Adequately fund community-based targeted testing and latent TB infection treatment focusing specifically on persons who are homeless, marginally housed, or co-infected with human immunodeficiency virus (HIV) and on persons who have diabetes and other medical risk factors for disease progression.
2. Develop correctional TB control programs to the functional level of external health department programs to improve screening and surveillance capacity, contact investigation, and case management and discharge planning of inmates who are moved frequently to different facilities or have high recidivism rates.
3. Increase resources to support early case detection and screening at sites with high crowding and limited ventilation. Mandatory TB screening should be implemented of all homeless persons in shelters, day drop-in centers, and other congregate sites to prevent outbreaks and spread of TB.
4. Provide the resources needed to implement geographic information system (GIS) mapping and deoxyribonucleic acid (DNA) genotyping in order to identify foci of ongoing transmission, target efforts, and communicate with the public.
5. Partner with key community members and providers to promote education, create cohesive interventions, and develop policies and strategies that address the unique TB problems of each community and locality.
6. Increase TB education of staff in shelters, housing services, substance abuse treatment sites, and correctional facilities as well as providers serving high-incidence U.S.-born populations to address the lack of awareness that TB is a health disparity among the populations that they serve.

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Action Plans for Tuberculosis Elimination among the U.S.-born

Community Partners

7. With assistance from local and state TB control programs, medical providers and institutions that provide health services for high-risk U.S.-born persons should incorporate programs to provide targeted testing and treatment for latent TB infection as part of their routine medical services.
8. Sites, such as correctional institutions, homeless shelters, and substance abuse treatment facilities, where high-risk U.S.-born persons tend to congregate, should implement mandatory TB screening to detect cases, prevent outbreaks, and limit the spread of TB.
9. Community-based organizations that provide support and advocacy for high-risk U.S.-born populations should educate their constituencies and the public about the hazards of TB in their target populations and the risks to the general community and should advocate for funding of public programs to protect against the disease.

4. Foreign-born Populations

As noted in the 2000 IOM report, the burden of TB among foreign-born individuals results from latent TB infection that progresses to active TB after arrival in the United States, so expanded treatment of latent TB infection will be required to eliminate TB. There are also unique linguistic and cultural issues that must be addressed in providing quality TB services to many foreign-born individuals.

TABLE 6

Action Plans for Tuberculosis Elimination among the Foreign-born

Federal Government

1. The Division of Tuberculosis Elimination should evaluate the option of testing all immigrant applicants being screened overseas for latent TB infection (currently limited to children ages 2–14 years) using the new tools of blood testing with interferon gamma release assays (IGRAs) with the goal of treating latent TB infection with an effective, safe, short-course regimen.
2. The US government must maintain and increase its commitment to global TB control and elimination, including the development of new tools for diagnosis, treatment, and prevention of TB.

Local and State Government

3. Collaborate with Centers for Disease Control and Prevention (CDC) and overseas panel physicians in evaluating and ensuring the effectiveness of the overseas screening process of immigrants and refugees now that sputum cultures for TB have been added to the screening process.
4. Ensure the follow-up of immigrants who have undergone overseas TB screening and testing for latent TB infection.
5. Collaborate with agencies and organizations (such as U.S. Immigration and Customs Enforcement [ICE]; federal, state, and local public health authorities; transnational referral programs; foreign consulates; and foreign national TB programs) to facilitate continuity of care for ICE detainees with confirmed or suspected active TB who may be repatriated before completion of TB therapy.
6. Work with medical practitioners serving foreign-born populations, with civil surgeons, with community health centers, and with institutions and employers that sponsor foreign-born students, to raise the awareness of TB in high-risk foreign born persons, reduce delays in diagnosis, and broaden the scope of targeted testing and treatment programs for LTBI. Services that can be provided by health departments include facilitating laboratory testing, providing medications, providing consultation and referral services, and evaluating the effectiveness of community-based programs.

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Action Plans for Tuberculosis Elimination among the Foreign-born

Community Partners

7. Community health centers should make the diagnosis and treatment of latent TB infection a priority activity, providing the full range of TB prevention services for migrant workers and new immigrant populations regardless of ability to pay, visa status, and movement among local health jurisdictions.
8. Civil surgeons performing visa status adjustments for immigrants in their communities must ensure that their evaluations include effective TB screening according to current standards. Greater emphasis, combined with additional resources, must be placed on treatment of latent TB infection among immigrant diagnosed with latent TB infection during these examinations.
9. Institutions and employers who sponsor students and workers from moderate- or high-burden TB countries, who under current policy are not required to undergo TB screening before entry to the United States, should establish TB screening programs for their constituents. Such programs should incorporate treatment for those diagnosed with latent TB infection.
10. Medical practitioners that provide care to foreign-born persons should educate their patients about symptoms of TB and should incorporate TB screening, targeted testing and treatment of LTBI as part of ongoing medical services to high-risk patients.

5. TB Low-incidence Areas

The challenges of progressing toward TB elimination in areas with low-incidence rates of TB were described in the 2002 report of the Advisory Council for the Elimination of Tuberculosis (ACET). Included in the report was a recommendation to evaluate the feasibility of interstate regionalization by creating consortiums focusing on operational research. There are now two models that have been developed and implemented for regionalization of TB prevention and control. The first model is the New England TB Consortium (NETBC): a collaboration between the six New England TB programs and the CDC. These six states share a similar epidemiology pattern (non-U.S.-born, difficult-to-reach, high-risk populations), common borders, and a history of past collaborative efforts. The NETBC has built a regional leadership team that shares expertise and resources in an organized and supportive fashion.

The second model, developed with funding from the CDC TB Epidemiologic Studies Consortium, is described in the Proposed Approach to Tuberculosis Control and Elimination in the Low-Incidence Region of Idaho, Montana, Utah and Wyoming (PATCE) available online at <http://www.nationaltbcenter.ucsf.edu/research/patce.cfm>. In this model, four western states with a team of CDC staff, national TB experts, and the Francis J. Curry National TB Center staff worked to identify and address the challenges of controlling TB in low-incidence areas by implementing and evaluating a series of public health interventions to meet those challenges.

Three important findings were noted in both models. First, TB control program staff members and resources in low-incidence states cannot simply merge across the state boundaries to provide a larger multistate program caring for larger numbers of cases. Second, TB control services within each state can be enhanced when the TB program staff collaborate in a multistate regional TB elimination effort. Third, limited—but necessary—additional federal resources including personnel targeted to the region must be provided to maintain effective regional collaboration. Effective regional collaboration can be achieved in TB elimination, but it will require the ongoing commitment by local, state, and federal officials to maintain core TB control functions as the number of TB cases decreases during the TB elimination effort. A successful TB elimination campaign will lead to more TB low-incidence areas, and the lessons learned in the New England and the western state region will be applicable to more areas of the United States. Core TB control services must be maintained, not eliminated, as the number of TB cases declines.

TABLE 7

Action Plans for Tuberculosis Elimination in Low-incidence Areas

Local, State, and Federal Government

1. Stop the loss of core TB control capacity: Resources must be provided and sustained at local, state, and federal public health levels to maintain core TB control program functions in low-incidence regions as outlined in the “Progressing Toward Tuberculosis Elimination in Low-Incidence Areas of the United States” (MMWR 2002;51[No. RR-5]:1–16).
2. Make progressing toward TB elimination in low-incidence areas a national priority.

Federal Government

3. The Centers for Disease Control and Prevention (CDC) should undertake the following roles and responsibilities:
 - Continue to assess regional capacity and provide funding for expansion of regional TB control efforts in low-incidence states.
 - Provide increased support for the Division of TB Elimination Field Services and Evaluation Branch to increase assignments of medical officers and public health advisors to provide technical assistance and support for TB control and elimination efforts.
 - Ensure that federal funding to low-incidence states will allow for innovative new strategies to improve TB elimination efforts.
 - Continue to sponsor operational research and to provide technical assistance for TB surveillance and program evaluation focused on the unique needs in low-incidence areas.
 - Collaborate with state health departments in low-incidence regions in developing the capacity for providing the expertise, case management, and specialized treatment (including surgery) for patients with multidrug-resistant TB.
 - Collaborate with state health departments in low-incidence areas to replicate and support successful models for providing regional access to facilities for prolonged health care and/or isolation when needed.
 - Assist in the investigation and control of outbreaks in collaboration with local and state health departments and other federal agencies.
 - Continue to periodically assess the status of TB control laws and regulations and revise model TB laws as needed.

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Action Plans for Tuberculosis Elimination in Low-incidence Areas

State and Local Government

4. Create a plan and/or participate in the creation of a regional multistate TB elimination plan that prioritizes activities of public health programs in low-incidence areas based on an assessment of resources, TB control goals, and input from community organizations and advocacy groups.
5. Develop and/or participate in the development of regional programs to provide educational and training opportunities that meet the unique needs of public health staff in low-incidence areas for whom providing quality TB services must compete with other assignments. Where feasible, training and education activities may best be designed to minimize travel and/or combine TB activities with other trainings or conferences and/or use long-distance, Internet-based approaches.
6. Ensure the timely availability of high-quality laboratory services within the jurisdiction. In states where there is not enough need or where resources are inadequate, the state public health laboratory should arrange that certain tests and functions be done at contract laboratories or regional public health laboratories and carefully monitor performance of these external laboratories using mechanisms to identify and improve unsatisfactory performance.
7. Prevent the development of drug-resistant TB cases by ensuring the provision of directly observed therapy for patients with active TB even in low-incidence, remote locations. This should include exploring novel approaches such as using trained, contracted, or volunteer community members to provide directly observed therapy or the assignment of public health teams or community health teams to remote locations.

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Action Plans for Tuberculosis Elimination in Low-incidence Areas

Community Partners

8. In low incidence areas, non-governmental partners can play a particularly important role in TB elimination efforts because government agencies often have minimal infrastructure for disease control programs.
 - General medical practitioners should prioritize communicable diseases among CME choices, because patients symptoms of TB usually first seek medical attention in that sector.
 - General and specialty medical associations should include TB among their educational programs for their constituents.
 - Organizations that provide advocacy and support for groups at high risk for TB should educate their constituencies about the importance of TB, and should maintain close liaison with public health agencies.
 - Employers of workers from high-risk populations should ensure the ready access to medical care for their workers.
 - Organizations that provide emergency services including overnight shelter, should consult with public health agencies to assess the risk of TB, and establish appropriate control measures.
 - Colleges and universities that sponsor foreign students should consult with public agencies to assess the risk of TB among their students, and establish appropriate control measures.

E. Conclusion: The Call to Action

The TB Elimination Plan Committee convened by Stop TB USA has concluded that the goal of eliminating TB in the United States remains beyond reach with our current TB control tools and that, without a renewed and expanded commitment, the scourge of TB will likely persist for nearly 100 years. Preventable TB cases with the associated deaths, disability, and personal and societal cost will continue to occur unless measures to accelerate the elimination of TB are developed and implemented. The TB Elimination Committee endorses the IOM's year 2000 recommendations in *Ending Neglect* but concludes that even the IOM's revised timeline of 2035 cannot be met due to the national failure to implement the IOM recommendations for accelerating the elimination of TB.

In this call to action, the TB Elimination Plan Committee recommends that a new timeline be developed for the goal for TB elimination in the United States, along with new interim targets. These new interim targets must be realistically achievable with broader application of existing TB elimination tools as well as with the implementation of new tools and strategies that are under development. We believe that the success of this effort will require that stakeholders and partners join with Stop TB USA in endorsing the revised goal and interim targets as well as the implementation of general recommendations for the nation as a whole and those specific to populations at higher risk.

There must be a renewed and expanded commitment to the goal of TB elimination in the United States by national, municipal, county, and state policy makers if adequate resources, including funding, are provided. The full complement of stakeholders and partners will need to become engaged if we are to ensure that all U.S. citizens and residents are provided with timely access to the life-saving services for the diagnosis, treatment, and prevention of TB.

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