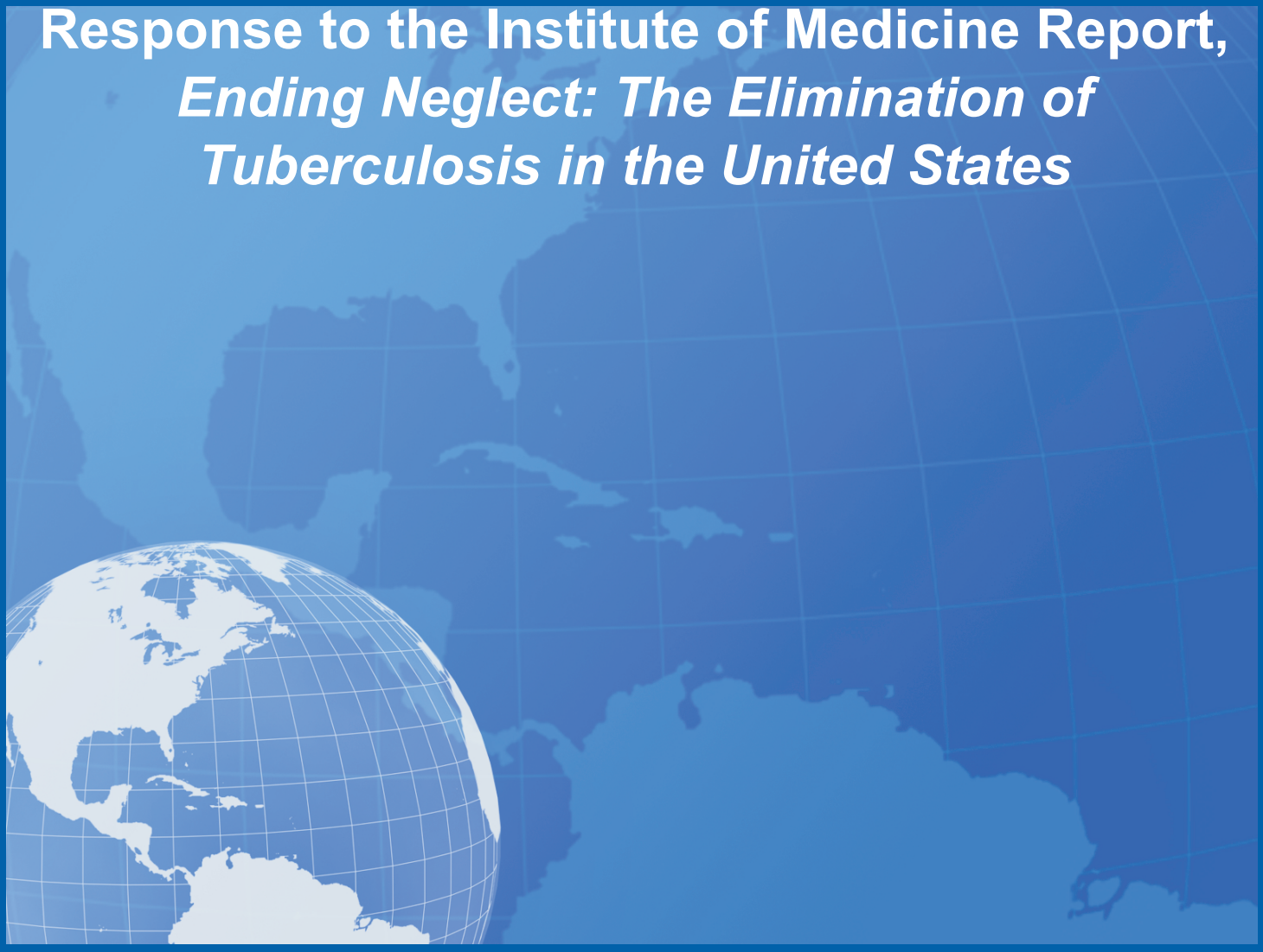
Federal Tuberculosis Task Force Plan in Response to the Institute of Medicine Report, *Ending Neglect: The Elimination of Tuberculosis in the United States*



Department of Health and Human Services
Centers for Disease Control and Prevention

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Federal Tuberculosis Task Force Plan in Response to the Institute of Medicine Report, *Ending Neglect: The Elimination of Tuberculosis in the United States*

Coordinated by

The Division of Tuberculosis Elimination
National Center for HIV, STD, and TB Prevention
Centers for Disease Control and Prevention
Department of Health and Human Services

on behalf of
The Federal Tuberculosis Task Force
(Contributors listed on pages 63-65)

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Executive Summary

Introduction

After years of decline in the United States, the number of reported tuberculosis (TB) cases increased 20% between 1985 and 1992. This resurgence was associated with a deterioration of the infrastructure for TB services; the human immunodeficiency virus (HIV) epidemic, which substantially increases the risk for active TB among persons with latent TB infection (LTBI); increased immigration of persons from countries where TB is endemic; TB transmission in congregate settings (e.g., hospitals and prisons); and development of multidrug-resistant TB (MDR TB). However, a renewed emphasis on TB control and prevention and a major commitment of resources in the mid- to late 1990s resulted in substantial declines in the disease. In 2000, the number of TB cases decreased for the eighth straight year to an all-time low of 16,377 cases, a 7% decrease over the 17,531 cases reported in 1999.

In the summer of 2000, the National Academy of Sciences' Institute of Medicine (IOM) issued a report, *Ending Neglect: The Elimination of Tuberculosis in the United States.*[1] The report states that the resurgence of TB in the United States was the price of neglect reflected in earlier funding reductions and concludes that, with proper funding, organization of prevention and control activities, and research for development of new tools, TB can be eliminated as a public health problem in the United States.

In response, the Federal TB Task Force developed this plan to implement the IOM recommendations. The plan is organized around the five areas of IOM recommendations and provides a blueprint for a significant reduction in the remaining U.S. TB cases. The plan includes domestic and global strategies — planned for implementation in partnership with global agencies such as the World Health Organization (WHO) and the International Organization of Migration — as well as detailed action steps and specific agency roles.

Chronology in the Development of This Report

In responding to the IOM report, members of the Federal TB Task Force met to develop a coordinated federal action plan. Two meetings were convened in Bethesda, Maryland, on December 6-7, 2000, and February 8-9, 2001, to initiate the development of this plan.
A consensus was reached in determining the lead agencies and collaborating agencies for each activity. Individual recommendations revolving around common activities were consolidated, and a consensus was reached on the resulting list by circulating drafts to the entire task force. In the next step, lead individuals were identified for the lead agencies. These persons worked with named co-leads and collaborating agencies to further develop the strategies by adding additional action steps where deemed necessary to implement the strategies. Subsequent drafts of the entire document were shared with the Federal TB Task Force participants who provided comments, where appropriate, for the next draft. The final draft was discussed at a Federal TB

Task Force conference call in late August 2001, where remaining issues were resolved. This was followed by a series of additional participant reviews accomplished by circulation of the drafts to participants. Because of the unusual multiagency nature of this document, this final document went through high-level multiagency clearance before publication.

Strategies for Eliminating Tuberculosis

The IOM recommended five overarching strategies for eliminating TB. The first strategy, maintaining control of TB, is a necessary prerequisite to elimination of the disease and requires strengthening of labor-intensive activities that make optimal use of available tools to help find and cure all persons with active TB. The IOM's second strategy is to accelerate the decline of TB. Maintaining control of TB is not sufficient to eliminate TB; individuals can unknowingly carry live bacteria that cause TB for years without getting sick (also known as latent TB infection). An estimated 10 to 15 million persons in the United States have latent TB infection, many of them in identifiable but hard-to-reach populations. Latent TB infection can suddenly turn active and contagious. Finding and treating high-risk persons with latent TB infection before they become sick — and infectious — is absolutely essential to eliminating TB. High-risk persons include those with recent infection, contacts of persons with infectious TB, persons with HIV or AIDS, substance abusers, persons who have immigrated to the United States from areas of the world with high rates of TB, prisoners, and the homeless. In addition, persons who reside or work in institutional settings (e.g., hospitals, homeless shelters, correctional facilities, nursing homes, and residential homes for patients with AIDS) may have an ongoing risk for acquiring TB infection and disease.

Thirdly, the IOM recommends the development of new tools. The goal of TB elimination cannot be reached with the tools that are currently available. TB elimination will require an increased investment in TB research to develop a more effective vaccine, as well as new tools and drugs to more rapidly and reliably diagnose and shorten treatment for all persons with latent and active TB, including those afflicted with MDR TB. The fourth IOM strategy calls for increased global United States actions. The IOM report notes that the proportion of foreign-born TB cases in the United States has been steadily increasing and says it benefits the United States to help strengthen TB control programs globally. Specifically, page 11 of the IOM report states that "Tuberculosis will not be eliminated in the United States until the worldwide pandemic is brought under control." Finally, the IOM recommends an assessment of the impact of actions taken in response to the IOM report. The Advisory Council for the Elimination of Tuberculosis (ACET) and the Federal TB Task Force will monitor the federal response to the IOM report.

In response to these recommendations, the Federal TB Task Force developed the action steps contained in this document. Specific tasks and projects are described, and agencies with the lead responsibility for each step, along with estimated start and completion dates, are provided.

Conclusion

While the strategies and action steps complement ongoing federal TB prevention, control, and research activities, they cannot all be implemented with current funding. Federal TB Task Force agencies will implement the strategies and action steps contained in this report as resources become available. Federal TB Task Force members continue to confer via teleconference on a quarterly basis and remain ready to provide a coordinated federal response to the IOM recommendations and to progress toward TB elimination in the United States.

Introduction

Following more than three decades of declining TB trends, TB cases in the United States soared 20% between 1985 and 1992. The Federal TB Task Force was established in December 1991 in response to this unprecedented surge in TB cases. (The fourth chapter of this document lists the members of the Federal TB Task Force.) Some of the serious factors associated with the resurgence included -

- The HIV epidemic, which increased the number of persons at extraordinary risk of TB disease progression
- Immigration from countries with a high prevalence of TB or where TB is a substantial public health problem; a reflection of the global nature of the disease
- Outbreaks in congregate settings such as hospitals and correctional facilities
- The widespread occurrence and outbreaks of difficult-to-diagnose and treat MDR TB strains
- A deterioration and dismantling of TB services and of the related public health infrastructure during the earlier periods of TB declines, resulting in inadequate capacity to respond to increased demands during the resurgence

By April 1992, the TB Task Force had responded with a *National Action Plan to Combat Multidrug-Resistant Tuberculosis.*[1] This plan complemented the 1989 ACET document, *A Strategic Plan for the Elimination of Tuberculosis in the United States*[2], and guided the mobilization of new resources for responding to the TB crisis in the United States. Consequently, TB and MDR TB case rates declined annually from 1992 to 2000. However, several elements of the plan could not be implemented due to resource constraints. And although the number of TB cases has declined, achievement of the goal of TB elimination was deemed uncertain.

In 1999, ACET reaffirmed its call for the elimination of TB in the United States[3] and the National Academy of Sciences' Institute of Medicine was commissioned to evaluate the feasibility of TB elimination in the United States. In the summer of 2000, the Institute of Medicine issued its independent report *Ending Neglect: The Elimination of Tuberculosis in the United States*.[4] This report suggests that the resurgence of TB in the United States was the price of neglect reflected in earlier funding reductions for both TB programs and research. The report states that elimination of TB in the United States is feasible but will require social mobilization plus maintenance of public interest and commitment necessary to provide resources for the effort.

The Federal TB Task Force has undertaken the challenge of responding to this landmark IOM report by developing a coordinated federal action plan. The broad membership of the TB Task Force focused heavily on the first three (of five) areas of the IOM report that were considered amenable to federal activity:

- "Maintaining control of TB: The control of tuberculosis requires the ability to identify and cure individuals with active tuberculosis disease."

- "Speeding the decline of TB: After ensuring the control of tuberculosis, the second priority is targeted tuberculin skin testing and treatment of latent TB infection, which includes identification and treatment of contacts."

- "Developing new tools: Tuberculosis elimination is not possible with the tools that are available currently but will require an investment in basic and applied research to develop better diagnostic, treatment, and prevention tools as well as related behavioral and social research targeted toward understanding and improving patient adherence with therapy."

While the larger group of TB Task Force members did not focus heavily on the fourth and fifth areas of the IOM report, they were addressed. A smaller group of Federal TB Task Force members focused on the IOM global TB recommendations to decrease the number of foreign-born individuals with TB in the United States, to minimize the spread and impact of MDR TB, and to improve global health. In addition, the TB Task Force members briefly dealt with the fifth area of the IOM report by referring to the ACET and TB Task Force responsibilities for monitoring the federal responses to the IOM report. Furthermore, ACET has agreed to implement recommendation 7.3 and to monitor and evaluate this plan. To facilitate the process, CDC is working to generate a list of indicators for monitoring progress.

This Federal TB Task Force report is a response to the IOM report *Ending Neglect: The Elimination of Tuberculosis in the United States*, and is intended to influence and guide federal decision makers charged with planning TB control and elimination activities. The report is organized with reference to the major IOM areas noted above, while recognizing there is potential overlap in the impact of some activities (e.g., improved education to health care providers and to patients will improve both control of current TB burden and accelerate the decline of the disease). The report lays out a series of strategies that need to be undertaken at the federal level. In addition, this report addresses activities to support the Occupational Safety and Health Administration (OSHA) compliance instruction, CPL 2.106, *Enforcement Procedures and Scheduling for Occupational Exposure to Tuberculosis*, which provides uniform inspection procedures and guidance for OSHA Compliance Officers to follow when conducting inspections and issuing citations under Section 5(a)(1) of the OSH Act. Priorities will vary from agency to agency, and activities should be undertaken within the time frames indicated, as resources permit. Some of the activities are underway; however, many of the proposed activities will require additional resources. Many activities should and will continue beyond 2003. The report is intended as a plan for action by federal agencies. However, implementation will depend on the cooperation of many sectors of society. Indeed, the success of the plan will depend on a concerted effort and commitment at all levels and will involve collaboration between public health and other government agencies, professional societies, voluntary agencies, health care providers, community and faith-based organizations, and many others.

Chronology in the Development of This Report

In responding to the IOM report, members of the Federal TB Task Force met to develop a coordinated federal action plan. Two meetings were convened in Bethesda, Maryland (on December 6-7, 2000, and February 8-9, 2001), to initiate the development of this plan. At the December 6-7 TB Task Force meeting, each agency provided a summary of its TB-associated activities as they relate to the IOM report's recommendations. Then, using facilitated breakout workgroups made up of scientific and program experts, the participants drafted action steps to be included in a federal action plan response to the IOM recommendations. Participants agreed to initially focus on the first three (of five) broad recommendations of the IOM report that were considered amenable to federal activity:

1. Maintaining control of TB
2. Accelerating the TB decline
3. Developing new tools

Three breakout groups were organized according to participant areas of interest and expertise: 1) services, financing, and quality; 2) targeted testing and treatment of latent TB infection; and 3) needed research. The groups considered topics in the context of the three IOM recommendations and the following related issues: 1) defining the necessary federal activities related to these areas; 2) determining which agencies should take the lead in developing and implementing the identified activities; and 3) determining which agencies should be involved as collaborators in developing and implementing these activities. The breakout groups developed a comprehensive series of recommended activities for the federal government to undertake. At the February 8-9 meeting, the TB Task Force representatives further developed the recommended activities, and assigned a priority to each of them. A consensus was reached in determining the lead agencies and collaborating agencies for each activity. Common activities and themes became obvious in many of the recommendations of the separate breakout groups. Following the meeting, individual recommendations revolving around common activities were consolidated, and a consensus was reached on the resulting list by circulating drafts to the entire task force.

In the next step, lead individuals were identified for the lead agencies. These persons worked with named co-leads and collaborating agencies to further develop the strategies by adding additional action steps where they were deemed necessary to implement the strategies. Subsequent drafts of the entire document were shared with the Federal TB Task Force participants who provided comments, where appropriate, for the next draft. The final draft was discussed at a Federal TB Task Force conference call in late August 2001, during which remaining issues were resolved. This was followed by a series of additional participant reviews accomplished by circulation of the drafts to participants. Because of the unusual multiagency nature of this document, it went through high-level multiagency clearance before publication.

The names of participating representatives of TB Task Force federal agencies and organizations are included in the fourth chapter of this report. The agencies represented include (1) agencies of the Department of Health and Human Services: the Office of Minority Health of the Public

Health Service (OMH/PHS), the Agency for Healthcare Research and Quality (AHRQ), the Centers for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA), the Health Care Financing Administration (HCFA), the Health Resources and Services Administration (HRSA), the Indian Health Service (IHS), the National Institutes of Health (NIH), Regional Health Administrators (RHAs), and the Substance Abuse and Mental Health Services Administration (SAMHSA); (2) other Federal agencies: the Department of Veterans Affairs (VA), the Federal Bureau of Prisons (FBOP), the U.S. Marshals Service, the Office of HIV/AIDS Housing in the Department of Housing and Urban Development (HUD); the Office of Occupational Medicine, Occupational Safety and Health Administration (OSHA), the U.S. Agency for International Development (USAID); the Immigration and Naturalization Service (INS),[1] the Department of State (DOS); the CDC Advisory Council for the Elimination of Tuberculosis (ACET); and (3) the American Lung Association and the National TB Controllers Association (NTCA).

This report is organized with reference to the major IOM recommendation areas with acknowledgment of potential overlap in the impact of some activities (e.g., improved education to health care providers and to patients will both improve control of the current TB burden and accelerate the decline of the disease).

Note: The following outline lists the specific IOM recommendations followed by the related proposed strategies and action steps, as well as the lead and collaborating agencies.

[1]INS functions are now subsumed by the Department of Homeland Security, Directorate of Border and Transportation Security, Bureau of Immigration and Customs Enforcement.

Strategies and Action Steps

Domestic Federal Actions in Response to the Institute of Medicine Report on TB: *Ending Neglect: The Elimination of Tuberculosis in the United States*

A. Strategies for Maintaining Control of TB

Maintaining control is a necessary prerequisite to elimination of the disease and requires strengthening labor-intensive activities that make optimal use of available tools to help find and cure all persons with active TB.

IOM Recommendation 3.1: "To permanently interrupt the transmission of tuberculosis and prevent the emergence of multidrug-resistant tuberculosis..."

Strategies	Action Steps
1. Ensure available clinical and public health services to provide continuous quality care for TB patients. Lead Agency: CDC Collaborating Agencies: IHS, VA, DOJ, SAMHSA, HRSA, NTCA Start Date: FY 2002 Completion Date: Ongoing	a) Ensure that patient-centered case management and monitoring of treatment outcomes are implemented universally and are the standard of care for all patients. Lead: NCHSTP — Collaborators: IHS, VHA, HAB, FBOP, SAMHSA, BPHC, NTCA Start Date: prior to FY 2002 — Completion Date: Ongoing b) Ensure appropriate care for patients with MDR TB and monitor their response to treatment and treatment outcomes. Lead: NCHSTP — Collaborators: IHS, VHA, HAB, FBOP, BPHC, NTCA Start Date: prior to FY 2002 — Completion Date: Ongoing c) Support the infrastructure needed for laboratory-based identification and treatment of TB and ensure the provision of quality and timely laboratory services with appropriate safety facilities. Lead: NCHSTP — Collaborators: PHPPO, BPHC, NTCA Start Date: prior to FY 2002 — Completion Date: Ongoing

2. Improve and optimize follow-up of immigrants and refugees arriving in the U.S. with suspected TB. Lead Agency: CDC Collaborating Agencies: DOJ ORR, DOS, NTCA, DHS/BICE Start Date: FY 2002 Completion Date: FY 2005	a) Implement electronic surveillance of TB notifications for immigrants and refugees arriving in the U. S. with suspected TB in order to effectively communicate data between local, state, and federal programs and ensure appropriate domestic follow-up, and quality and continuity of care. Lead: NCID Collaborators: NCHSTP, CA, PRM, SITD, ORR, NTCA Start Date: prior to FY 2002 Completion Date: FY 2005 (1) Build the software and infrastructure to electronically transmit the data to state health departments. Identify and enlist a representative group of 8 state health departments (State TB Control Programs and State Refugee Health Programs) and 2 metropolitan health departments, and pilot the system. Lead: NCID, NCHSTP, NTCA Collaborator: None Start Date: prior to FY 2002 Completion Date: Ongoing (2)With input from U.S. TB controllers, establish national performance measures, objectives, and data collection to enable assessment and improvement of domestic follow-up. Lead: NCID, NCHSTP Collaborator: NTCA Start Date: prior to FY 2002 Completion Date: FY 2003 (3) Fully implement the electronic surveillance for TB notification to 50 state health departments and remaining metropolitan health departments. Lead: NCID Collaborators: NCHSTP, CA, PRM, NTCA Start Date: FY 2003 Completion Date: FY 2005 (4) Build the software to collect and consolidate data from the overseas examining physicians (i.e., panel physicians) at panel physicians' facilities or at the U.S. ports of entry. Establish the infrastructure to collect the data at a centralized Immigration and Naturalization Service (INS) collection point (e.g., Mesquite, Texas) or to interface with the existing data collection system with the Department of State. Once software is operational, data will be transmitted directly to CDC, Division of Global Migration and Quarantine (DGMQ), for dissemination to the receiving health departments. Lead: NCID Collaborators: NCHSTP, SITD, CA, PRM, NTCA

2. Continued from above.	(5) Identify and enroll a selected group of overseas examining physicians (panel physicians) to collect and transmit the medical data to DGMQ. Lead: NCID Collaborators: SITD, CA, PRM Start Date: FY 2002 Completion Date: FY 2005
3. Improve and ensure the quality of tuberculosis examinations conducted by overseas panel physicians and domestic civil surgeons. Lead Agencies: CDC, DOJ Collaborating Agencies: NTCA, DOS Start Date: FY 2002 Completion Date: Ongoing	a) Develop and implement a standardized, fully operational quality assessment program to evaluate the performance and effectiveness of overseas TB screening by panel physicians for immigrants and refugees. Lead: NCID Collaborators: NCHSTP, NTCA, CA 1) Expand the overseas quality assessment program and focus initially on countries with high prevalence of tuberculosis and HIV and/or high volume of immigration to the U.S. Lead: NCID Collaborators: NCHSTP, PHPPO, CA, PRM, NTCA Start Date: FY 2002 Completion Date: FY 2003 (2) Reestablish overseas posts to have responsibility for overseeing and ensuring the quality assessment program in selected regions with high prevalence of tuberculosis, HIV, and/or heavy volume of immigration to the U.S. Lead: NCID Collaborators: CA, PRM, PHPPO Start Date: FY 2002 Completion Date: FY 2003

3. Continued from above	(3) Maintain a successful global quality assessment program. Lead: NCID — Collaborators: CA, PRM, NTCA Start Date: FY 2004 — Completion Date: Ongoing b) Implement a domestic quality assessment program to evaluate the effectiveness of screening by domestic civil surgeons for TB disease and latent TB infection among foreign-born persons already residing in the U.S. (i.e., adjustment of status applicants). This quality assessment program will (1) review and revise existing INS regulations governing the civil surgeon program; (2) create new forms and revise existing ones; (3) implement protocols for tracking the status of civil surgeon designations; (4) implement a standard protocol for CDC and health departments to evaluate the performance of civil surgeons; (5) use tools and resources developed by CDC for quality improvement of TB control programs; and (6) ensure that civil surgeon examination procedures and findings are integrated into effective targeted testing and treatment programs at state and local levels. Lead: AND, NCID — Collaborators: NCHSTP, NTCA Start Date: FY 2002 — Completion Date: Ongoing c) Develop reliable and systematic linkages between local health departments and civil surgeons to ensure referral and treatment of latent TB infection among persons adjusting status. The linkage will require implementation of local strategies to improve communications between civil surgeons and local health departments to streamline the referral process, assist patients in accessing local health departments (LHDs), and ensure adequate resources for the LHD's evaluation and treatment of adjustment of status applicants referred. Lead: AND, NCID, NCHSTP — Collaborator: NTCA Start Date: FY 2003 — Completion Date: Ongoing

4. Facilitate continuity of care for prisoners and INS detainees across correctional facilities and communities in the U.S. and Mexico and elsewhere. Lead Agencies: DOJ, USMS, HRSA Collaborating Agencies: CDC Start Date: FY 2002 Completion Date: Ongoing	a) Resurvey state laws for provisions regarding case transfers across correctional facilities, release and quarantine of persons with TB, and TB-related screening. Lead: NCHSTP — Collaborator: CDC/OD (OGC) Start Date: prior to FY 2002 — Completion Date: FY 2002 b) Develop reporting and discharge planning infrastructure for newly diagnosed and prevalent cases and suspects. Leads: FBOP, USMS, NCHSTP, DIHS — Collaborator: None Start Date: prior to FY 2002 — Completion Date: Ongoing c) Implement Health Resources and Services Administration/Division of Immigration Health Services (DIHS) program for continuity of care for persons detained by the INS and subsequently released or paroled in the U.S., in order to facilitate the continuity of care in the community and have TB completion of treatment monitored on a national level; share data with TB controllers and with tracking organizations such as Cure TB and TBNet. Lead: DIHS — Collaborators: D&R, NTCA Start Date: FY 2002 — Completion Date: Ongoing (1) Develop a model for the implementation and maintenance of a continuity of care program for released or paroled INS detainees and establish/strengthen partnerships between INS, DIHS, TB controllers in other countries, state and local health departments, and community TB service providers. The program should include a uniform method of data collection, including uniform tracking numbers and data elements across programs and services (e.g., DIHS, INS, state health departments, CDC, TBNet, Cure TB, etc.), and access to databases by TB providers and TB controllers across programs. Lead: DIHS — Collaborators: D&R, NTCA Start Date: FY 2002 — Completion date: Ongoing (2) Coordinate tracking of patients released from INS custody to link paroled aliens to services in the U.S., to link deported aliens to services in the country of origin, and to monitor inplementation of infectious disease guidelines. Lead: DIHS — Collaborators: D&R, NTCA Start Date: FY 2002 — Completion date: Ongoing

5. Continue to ensure TB medications are available and at federal pricing via the Department of Veterans Affairs national contract. Lead Agency: CDC Collaborating Agency: FDA, HRSA Start Date: FY 2002 Completion Date: Ongoing	a) Facilitate State TB program utilization of the existing Department of Veterans Affairs contract for federal pricing of TB medications. Lead: NCHSTP Collaborators: CDER, BPHC, HAB Start Date: FY 2002 Completion Date: Ongoing

6. Develop improved engineering techniques to prevent TB transmission. Lead Agencies: CDC, NIH Collaborating Agency: OSHA Start Date: FY 2006 Completion Date: FY 2006	a) Encourage and support research to develop improved engineering techniques for preventing transmission *of M. tuberculosis* in high-risk environments. Lead: NIOSH, NIAID Collaborator: OSHA Start Date: FY 2002 Completion Date: FY 2006 b) Use computational fluid dynamics to assess the efficacy of engineering controls supplemental to room ventilation. Lead: NIOSH Collaborator: None Start Date: FY 2002 Completion Date: FY 2004 c) Use computational fluid dynamics to evaluate the ability of various ventilation configurations/designs to prevent the migration of TB microbes from one room to another. d) Assess adequacy of personal protective equipment: (i) determine if the current user-seal checks as described by the manufacturers of N95 filtering facepiece respirators actually help to ensure an adequate fit; (ii) develop a no fit-test high-protection factor respirator performance test; (iii) conduct workplace study of how well N95 filtering facepiece respirators perform in actual health-care settings, including determining penetration and service time restraints; (iv) conduct surveillance of how respirators are used for protection against TB in health-care settings (types, duration of use, types and frequency of fit-tests used, etc.); and (v) conduct testing of newly certified N95 respirators to determine how well each certified respirator performs, enabling health care workers to make an informed and proper respirator selection. Lead: NIOSH Collaborator: None Start Date: FY 2002 Completion Date: FY 2003 (i, iii, iv) FY2004 (ii, v)

IOM Recommendation 3.2: "To ensure the most efficient application of existing resources..."

Strategies	Action Steps
1. Evaluate existing policies and referral systems for TB patients who may move within and between localities, states, and/or countries. Lead Agency: CDC Collaborating Agency: NTCA Start Date: FY 2002 Completion Date: FY 2003	a) Conduct a systematic review of existing policies and referral systems for TB patients who may move within and between localities, states, and/or countries. Lead: NCHSTP — Collaborator: NTCA Start Date: FY 2002 — Completion Date: FY 2002 b) Conduct a study of the outcomes of moved TB patients to determine if there are any adverse implications for continuity of care and treatment. Lead: NCHSTP — Collaborators: NCID, NTCA Start Date: FY 2002 — Completion Date: FY 2002 c) Convene a meeting of state and local TB controllers, or their designees, to develop a comprehensive process for referral of TB patients who move within and between localities, states, and/or countries. Lead: NCHSTP — Collaborators: NCID, NTCA Start Date: prior to FY 2002 — Completion Date: FY 2003 d) Determine the need to revise the Report of a Verified Case of Tuberculosis (RVCT) to expand data on patients who move. Lead: NCHSTP — Collaborators: NCID, NTCA Start Date: FY 2002 — Completion Date: FY 2004

2. Develop tools for improving the quality of public health TB control programs and related evaluation. Lead Agency: CDC Collaborating Agencies: NTCA, VA Start Date: FY 2002 Completion Date: Ongoing	a) Establish an evaluation section in the Division of Tuberculosis Elimination (DTBE) to develop tools for evaluating and improving the quality of TB control programs. Lead: NCHSTP Collaborators: VHA, PHPPO Start Date: FY 2003 Completion Date: Ongoing b) Periodically review for accuracy the nation's TB surveillance (case reporting) system, case management and contact data collection systems, and related protocols and guidelines; update as appropriate. Lead: NCHSTP Collaborators: PHPPO, NTCA Start Date: FY 2002 Completion Date: Ongoing c) Develop training for program evaluation and conduct training on-site at state and local TB control programs, regional meetings, and national meetings involving TB control program staff. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2002 Completion Date: FY 2003 d) Provide resources through the federal Cooperative Agreements to state and local TB control programs so that evaluation of TB program activities can be implemented. Incorporate results of evaluation in decisions regarding the allocation of federal funds. Lead: NCHSTP Collaborators: NTCA, NCID Start Date: FY 2002 Completion Date: Ongoing e) Evaluate the effectiveness of screening for TB and latent TB infection in foreign-born persons in the United States. Lead: NCHSTP Collaborators: NCID, NTCA Start Date: FY 2002 Completion Date: Ongoing

3. Develop short- and long-term plans for integrated information systems that are cross-jurisdictional and facilitate surveillance, case management, and program evaluation. Lead Agency: CDC Collaborating Agencies: VA, HRSA, IHS, NTCA Start Date: FY 2002 Completion Date: Ongoing	a) Survey state and local TB control programs to determine current status of their information systems, which programs are currently using TIMS for case management and program evaluation, other systems being used by programs for case management and program evaluation, programs' data needs for case management and program evaluation, and what data items are currently being collected. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2002 Completion Date: FY 2002 b) Develop an integrated information system that is both strong enough and flexible enough to facilitate surveillance, case management, and program evaluation and accommodate the needs of the various TB control programs. This system should have the capacity to expand as needed and be flexible enough for programs to customize the system to meet their needs. Lead: NCHSTP Collaborators: BPHC, HAB, VHA, IHS, NTCA Start Date: FY 2002 Completion Date: FY 2004 c) Assist state and local TB control programs to implement the new information system. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2004 Completion Date: FY 2006 d) Annually evaluate Veterans Health Administration TB-related activities and policies; revise as appropriate. Lead: VHA Collaborator: None Start Date: FY 2002 Completion Date: Ongoing

IOM Recommendation 3.4: "To maintain quality in TB care and control services in an era of increased use of managed care systems and privatization of services..."

Strategies	Action Steps
1. Encourage states to adopt the Medicaid eligibility option for coverage of individuals infected with TB as described in section 1902(z) of the Social Security Act. Lead Agencies: CMS, CDC Collaborating Agency: NTCA Start Date: FY 2002 Completion Date: FY 2003	a) Encourage states to adopt the TB option described in 1902(z) of the State Medicaid Manual at the National Eligibility Training Conference held in Atlanta (November 6-8, 2001) and the 2003 National TB Controllers Workshop in Washington, DC (June 10-11, 2003). Leads: CMS, NCHSTP Collaborator: None Start Date: FY 2002 Completion Date: FY 2003

2. Evaluate funding sources (including public and private third-party payers) and explore ways to increase third-party reimbursement for TB services. Lead Agency: CDC Collaborating Agency: NTCA Start Date: FY 2002 Completion Date: FY 2004	a) Identify funding sources for outpatient TB services in a sample of TB cases. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2002 Completion Date: FY 2003 b) Determine facilitating factors and barriers to third-party billing and reimbursement. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2002 Completion Date: FY 2003 c) Determine the current programmatic and fiscal impact of reimbursement. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2002 Completion Date: FY 2003 d) Using study results, develop recommendations for strategies to maximize and improve third-party reimbursement for TB control activities. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2003 Completion Date: FY 2004

3. For TB care in the private sector, including managed care organizations (MCOs), evaluate the capacity of public health programs to monitor care. Lead Agency: CDC Collaborating Agency: NTCA Start Date: FY 2002 Completion Date: Ongoing	a) Identify and/or develop recommendations to (1) improve collaboration between health departments and providers as recommended in CDC's Essential Components of a Model TB Program (this may include model MCO policies, TB Health Plan Employer Data and Information Set (HEDIS) indicators, and/or CDC public health performance standards) and (2) emphasize health departments' major responsibilities for monitoring and ensuring the quality of all TB-related activities in the community as part of their responsibility to protect the public health. Lead: NCHSTP Collaborators: PHPPO, NTCA Start Date: FY 2002 Completion Date: FY 2002 b) Establish and implement methodologies to review, evaluate, and improve ability of public health programs to monitor care, based on identified standards, indicators, and policies. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2002 Completion Date: Ongoing

IOM Recommendation 3. 5: "To promote a well-trained medical (in a broad sense) workforce and educated public..." :

Strategies	Action Steps
1. Prioritize and implement a strategic plan for TB training/ education designed to educate patients, workers, and providers, particularly of high-risk populations. Lead Agency: CDC Collaborating Agencies: IHS, VA, DOJ, SAMHSA, NIH, HRSA, FDA, NTCA, DOL Start Date: FY 2002 Completion Date: FY 2005	a) Engage in a participatory review of the 1998 "Strategic Plan for Tuberculosis Training and Education" document; convene meeting of original workgroup members and additional key partners, including representatives from targeted stakeholder audiences; review progress; update plan; disseminate revised document; monitor and evaluate progress; reconvene partners on a yearly basis to review findings and adjust the plan, as appropriate. Lead: NCHSTP — Collaborators: PHPPO, NIOSH, NHLBI, NTCA , OSHA, VHA Start Date: prior to FY 2002 — Completion Date: Ongoing b) After review/revision of the "Strategic Plan," conduct needs assessment with appropriate stakeholder audiences to assess currently available tools and guidelines, utilization, and level of implementation. Based on information gathered, conduct a gap analysis to determine development needs for products and infrastructure. Use this information to supplement objectives/goals of "Strategic Plan for Training and Education." Lead: NCHSTP — Collaborator: NTCA Start Date: prior to FY 2002 — Completion Date: Ongoing c) Evaluate existing educational materials and communication products; evaluate usefulness of guidelines and recommendations for target audiences; plan for updates where necessary. Leads: NCHSTP, NIOSH — Collaborators: CDRH, NTCA, OSHA Start Date: prior to FY 2002 — Completion Date: Ongoing d) Working in collaboration with patient and provider representatives (including potentially exposed workers), as well as technical and communication experts, develop patient and provider education materials that are culturally and linguistically appropriate for target audiences. Leads: NCHSTP, NIOSH — Collaborators: NTCA , OSHA Start Date: prior to FY 2002 — Completion Date: FY 2005

1. Continued from above	e) Identify culturally appropriate incentives and enablers to help ensure completion of therapy for infection and disease. Lead: NCHSTP — Collaborators: NTCA, OSHA Start Date: prior to FY 2002 — Completion Date: FY 2004 f) Enhance training and education of providers by (i) increasing cultural competency among health care workers; (ii) working with agency Offices of Minority Health in developing appropriate resources and interventions; (iii) training health care workers regarding contact investigations; and (iv) developing additional education/training materials addressing skills for persons conducting the contact investigation. Leads: NCHSTP, NIOSH IHS, BPHC, DIHS, FBOP, OSHA — Collaborator: NTCA Startt Date: FY 2002 — Completion Date: FY 2005
2. Sustain support of existing Model TB Centers and consider development and expansion of Model TB Centers in order to ensure better access to training and education resources regionally for both high- and low-incidence areas. Lead Agency: CDC Collaborating Agencies: NIH, NTCA Start Date: FY 2002 Completion Date: Ongoing	a) Monitor progress of ongoing training and consultative activities by Model TB Centers. Lead: NCHSTP — Collaborators: NHLBI, NTCA Start Date: prior to FY 2002 — Completion Date: Ongoing b) Convene Model TB Center representatives yearly to revise and update work plans. Lead: NCHSTP — Collaborators: NHLBI, NTCA Start Date: prior to FY 2002 — Completion Date: Ongoing c) Announce availability of new resources for expansion of Model TB Centers. Lead: NCHSTP — Collaborators: NHLBI, NTCA Startt Date: 2003 — Completion Date: Ongoing

B. Strategies for Accelerating the Decline of TB

Maintaining control of TB is not sufficient to eliminate TB. Individuals can unknowingly carry live bacteria that cause TB for years without getting sick (also known as latent TB infection). An estimated 10 - 15 million persons in the U.S. have latent TB infection, many of them in identifiable but hard-to-reach populations. Latent TB infection can suddenly turn active and contagious. Finding and treating high-risk persons with latent TB infection before they become sick - and infectious - is absolutely essential to eliminating TB. High-risk persons include those with recent infection, contacts of persons with infectious TB, persons with HIV or AIDS, substance abusers, persons who have immigrated to the U.S. from areas of the world with high rates of TB, prisoners, and the homeless. In addition, persons who reside or work in institutional settings (e.g., hospitals, homeless shelters, correctional facilities, nursing homes, and residential homes for patients with AIDS) may have an ongoing risk for acquiring TB infection and disease.

IOM Recommendation 4.1: "To limit the spread of TB from infectious patients to their contacts..."

Strategies	Action Steps
1. Develop national recommendations or/guidelines for contact investigation, addressing the challenges of investigations among the foreign-born and in various social networks, and define terms such as "close contact." Lead Agency: CDC Collaborating Agencies: SAMHSA, HRSA, NIH, NTCA, DOL Start Date: FY 2002 Completion Date: FY 2010	a) Complete ongoing prospective study of contact investigations, which will provide the scientific basis for developing recommendations/guidelines for contact investigations. Lead: NCHSTP Collaborator: NTCA Start Date: prior to FY 2002 Completion Date: FY 2002 b) Conduct prospective study aimed at improving contact investigations among foreign-born populations in the U.S. Specific objectives of this study are 1) to improve contact identification for foreign-born TB patients, and 2) to improve interpretation of skin test results in foreign-born contacts. For objective 1), interviewing tools will be developed in multiple languages, input from an ethnographer will be sought in designing the study, and social networking approaches will be used. For objective 2), epidemiologic, immunologic, and non-tuberculous antigen test results will be correlated to develop an epidemiologic profile associated with increased risk of recent *M. tuberculosis* infection. Results of this prospective study will augment the scientific basis for developing recommendations and guidelines for contact investigations in foreign-born populations. Lead: NCHSTP Collaborators: NIAID, NTCA Start Date: FY 2002 Completion Date: FY 2004

1. Continued from above.	c) Evaluate intervention in 10 sites using social networking results and the epidemiologic profile associated with increased risk of infection, developed in the foreign-born contact study described in b) above. The evaluation will include the measurement of the impact of the intervention. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2005 Completion Date: FY 2006 d) Based on findings from a pilot intervention aimed at improving foreign-born contact investigations described in step c) above, modify intervention as needed and implement nationwide. Lead: NCHSTP Collaborators: NCID, NTCA Start Date: FY 2007 Completion Date: FY 2009 e) Develop process indicators for monitoring the quality of contact investigations. Preliminary achievement targets for each indicator will also be established by the panel. It is envisioned that these indicators will be an important tool for identifying contact investigation steps which need improvement, and for monitoring trends in investigation quality over time. Lead: NCHSTP Collaborator: NTCA Start Date: prior to FY 2002 Completion Date: FY 2002 f) Pilot intervention, introducing process indicators identified in step e) above to establish baseline quality and timeliness of sequential contact investigation steps at 20-30 pilot study sites. Trends in investigation quality will be monitored over time. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2002 Completion Date: FY 2004 g) Study the impact of pilot intervention described in step f) above with proposed process indicators. Outcomes will be 1) indicator results and 2) number and proportion of new TB cases prevented pre vs. post intervention. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2003 Completion Date: FY 2004

1. Continued from above.	h) Implement nationwide the process indicators identified, pilot tested, and evaluated in steps e)-g) above, and monitor the following outcomes from all reporting sites on an annual basis: 1) indicator results; 2) number and proportion of new TB cases prevented pre vs. post intervention; and 3) TB case rates pre vs. post intervention. Indicator achievement will also be correlated with other outcomes. Lead: NCHSTP — Collaborator: NTCA Start Date: FY 2004 — Completion Date: FY 2006 i) Develop and distribute recommendations/guidelines for contact investigations. The final product will include guidelines for contact investigations in U.S.-born populations, guidelines for contact investigations in foreign-born populations, and guidelines for use and interpretation of process indicators. Lead: NCHSTP — Collaborators: NCID, NIAID, NTCA, OSHA Start Date: FY 2002 — Completion Dates: See below FY 2003: Guidelines for contact investigations in U.S.-born populations FY 2005: Guidelines for use of process indicators FY 2006: Guidelines for contact investigations in foreign-born populations j) Conduct nationwide program evaluation to determine the extent to which state and local TB control programs have implemented the national recommendations/guidelines for contact investigations and determine the extent to which implementation has improved the quality of these changes. Lead: NCHSTP — Collaborator: NTCA Start Date: FY 2004 — Completion Dates: See below FY 2005: US-born contact investigation guidelines FY 2007: Process indicators for monitoring contact investigations FY 2010: Foreign-born contact investigation guidelines k) Develop an electronic contact investigation surveillance system with national standards for data elements and definitions, giving health department TB programs the ability to modify databases to (1) manage contacts through examinations and appropriate treatment, and (2) more effectively monitor and improve program performance. Lead: NCID — Collaborator: NTCA Start Date: FY 2002 — Completion Date: FY 2004

2. Implement CDC TB outbreak response plan for the U.S. Lead Agency: CDC Collaborator: NTCA Start Date: FY 2002 Completion Date: Ongoing	a) Develop a computer-based methodology to improve the identification of acute outbreaks and assist state and local TB programs to implement it; clearly define what situations should be reported. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2002 Completion Date: FY 2003 b) Expand assistance to state TB control programs to improve their ability to respond to outbreaks. Develop flexible tools to be used during outbreak investigations, develop outbreak response training courses, develop a set of best practices that outline the most cost-effective options for conducting large-scale investigations, and provide templates of existing outbreak response plans as guidance to ensure that at least 75% have outbreak response plans. Lead: NCHSTP Collaborator: NTCA Start Date: prior to FY 2002 Completion Date: FY 2003 c) Expand capacity of CDC and state TB programs to respond to increasing number of reported outbreaks. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2002 Completion Date: Ongoing d) Establish a new, computer-based, nationwide outbreak detection system, based on data from the national TB surveillance system. Determine under what conditions outbreaks are occurring and provide prevention recommendations. Hire and train staff at CDC to provide technical assistance for new system. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2002 Completion Date: Ongoing e) Provide emergency outbreak assistance to states and localities experiencing outbreaks of tuberculosis that overwhelm existing public health capacity. Lead Agency: NCHSTP Collaborator: NTCA Start Date: prior to FY 2002 Completion Date: ongoing

3. Conduct epidemiologic studies and behavioral research on contact investigations (e.g, social network analysis, study of why people do not complete LTBI therapy, identification of appropriate incentives/enablers); develop/test behavioral interventions for at-risk populations, including substance abusers. Lead Agency: CDC Collaborating Agencies: NIH, IHS, HRSA, SAMHSA, NTCA Start Date: FY 2002 Completion Date: FY 2007	a) Design, implement, and evaluate strategies improving the effectiveness of contact investigation activities (e.g., social network analysis, incentives/enablers). Lead: NCHSTP — Collaborators: NIAID, HAB Start Date: prior to FY 2002 — Completion Date: FY 2007 b) Determine what behavioral and social risk factors among contacts best predict adherence to testing and treatment. Lead: NCHSTP — Collaborators: NIAID, NHLBI Start Date: prior to FY 2002 — Completion Date: FY 2005 c) Assess the knowledge, skills, beliefs, and abilities of health care providers serving TB patients and their contacts and determine optimal practices to promote cooperation with the contact investigation process and completion of treatment for LTBI. Lead: NCHSTP — Collaborator: NHLBI Start Date: prior to FY 2002 — Completion Date: FY 2005 d) Ascertain the perspectives and special needs of TB patients and contacts (especially high-risk and vulnerable populations) to identify barriers to contact identification, testing, and treatment for LTBI. Lead: NCHSTP — Collaborators: IHS, NIDA, SAMHSA Start Date: prior to FY 2002 — Completion Date: FY 2005 e) Explore the cultural and socioeconomic context in which contact investigations are conducted and determine the impact that communities, service providers and systems, policy makers, and fiscal decision makers have on the successful identification of contacts and the prevention of disease. Lead: NCHSTP — Collaborators: BPHC, SAMHSA Start Date: prior to FY 2002 — Completion Date: FY 2005

3. Continued from above.	f) Assess existing behavioral research across all fields of inquiry that may be relevant to contact investigations and determine how to apply this information. Lead: NCHSTP Collaborator: NIH Start Date: prior to FY 2002 Completion Date: FY 2004 g) Train investigators in applying effective strategies and optimal techniques to contact investigation practice. Lead: NCHSTP Collaborator: NHLBI Start Date: FY 2005 Completion Date: FY 2007
4. Ensure that health care facilities maintain infection control activities. Lead Agency: CDC Collaborating Agencies: OSHA, NTCA Start Date: FY 2002 Completion Date: FY 2005	a) Update and disseminate guidelines for the prevention of TB transmission in health care settings. Lead: NCHSTP Collaborators: NCID, NIOSH, OSHA, NTCA Start Date: prior to FY 2002 Completion Date: FY 2002 b) Conduct operational research on completeness of implementation of nationwide guidelines. Lead: NCHSTP Collaborators: NCID, NIOSH, OSHA, NTCA Start Date: prior to FY 2002 Completion Date: FY 2005

5. Characterize circulating TB strains using DNA fingerprinting results. Lead Agency: CDC Collaborating Agency: NTCA Start Date: FY 2002 Completion Date: Ongoing	a) Establish regional genotyping centers to perform molecular characterization of all isolates of *Mycobacterium tuberculosis* from patients in the U.S. Effort will require high-throughput DNA sequencers to be placed at Atlanta and one in each of five regional laboratories. Lead: NCHSTP Collaborator: None Start Date: FY 2002 Completion Date: FY 2003 b) Receive, process, and analyze *M. tuberculosis* isolates from an estimated 12,000 patients per year. Lead: NCHSTP Collaborator: None Start Date: FY 2002 Completion Date: Ongoing c) Establish and support a national DNA fingerprinting registry to compare fingerprinting results from different geographic regions. Lead: NCHSTP Collaborator: NTCA Start Date: FY 2002 Completion Date: Ongoing

IOM Recommendation 4.2: "To prevent development of TB among persons with latent TB infection..."

Strategies	Action Steps
1. Ensure implementation of CDC guidelines for preventing and controlling TB in high-risk populations/environments. Lead Agency: CDC Collaborating Agencies: HRSA, INS, SAMHSA, IHS, VA, NIH, NTCA, DOL Start Date: FY 2002 Completion Date: Ongoing	a) Increase the capacity of TB control programs and other governmental and non-governmental agencies to implement targeted testing and appropriate treatment for high-risk populations (including HIV at risk, American Indians/Alaska Natives, other minorities, prisoners and staff in correctional systems, homeless, immigrants, migrant workers, IDU contacts, and workers who provide health care or other services to these populations). Lead: NCHSTP — Collaborators: NTCA, NIOSH, IHS, BPHC, DIHS, FBOP, HAB, NIDA, SAMHSA, OSHA, VHA Start Date: prior to FY 2002 — Completion Date: Ongoing

1. Continued from above	b) Identify (i) incentives and barriers to seeking out services or completion of treatment; (ii) enablers to the receipt of services; and (iii) appropriate messages to motivate seeking care. Lead: NCHSTP — Collaborators: DIHS, IHS, BPHC, HAB, NHLBI, OSHA Start Date: prior to FY 2002 — Completion Date: FY 2002 c) Ensure that federal agency RFAs include information on the need for TB education to health care providers. Lead: All Federal TB Task Force Agencies — Collaborator: None Start Date: prior to FY 2002 — Completion Date: Ongoing d) Develop and implement a plan to ensure compliance with CDC TB recommendations and establish grantee and contractor performance measures, contractual agreements, regulations, and links with health departments. Lead: NCHSTP — Collaborators: All Federal TB Task Force Agencies Start Date: prior to FY 2002 — Completion Date: Ongoing

2. For HIV—Use Ryan White Care Act guidance, and establish standards for TB-related clinical practices; identify active cases and opportunity to treat latent TB infection; and update AIDS educational training center material. Lead Agency: HRSA Collaborating Agencies: CDC, SAMHSA Start Date: FY 2002 Completion Date: Ongoing	a) Coordinate announcements of Ryan White Care Act to include quality-of-care indicators and standards for TB. Lead: HAB Collaborators: NCHSTP, SAMHSA Start Date: FY 2002 Completion Date: Ongoing b) Evaluate the number of active TB cases and latent TB infections identified and treated by Ryan White Care Act Clinics. Lead: HAB Collaborators: NCHSTP, SAMHSA Start Date: FY 2002 Completion Date: Ongoing c) Develop periodic updates of AIDS education training center materials. Lead: HAB Collaborators: NCHSTP, SAMHSA Start: FY 2002 Completion Date: Ongoing

3. For Corrections—Establish an acquisition process in which all federal contracts negotiated between state, local, and private correctional facilities require health care services that are consistent with current CDC guidelines regarding infection control, TB-related examination, treatment of disease and latent infection, contact investigation, and referral for continuity of care. Lead Agencies: DOJ, INS Collaborating Agency: DOL Start Date: FY 2002 Completion Date: Ongoing	a) Develop periodic communication between FBOP's contract team and the Federal TB Task Force to facilitate increased awareness of the agency's needs and role in the prevention and control of TB, based on CDC guidelines, in relation to contracting with external correctional facilities. Lead: DOJ Collaborator: None Start Date: FY 2002 Completion Date: Ongoing b) Assess pre-existing federal contracts to identify those which lack (1) sufficient content language to acquire the needed health care services that require screening, identification, evaluation, and treatment of TB disease and latent TB infection, and (2) criteria that will determine if appropriate services are fulfilled. Lead : DOJ Collaborator: DIHS Start Date: FY 2002 Completion Date: Ongoing c) Ensure ongoing coordination in the development of agency acquisition planning which supports the renewal, modifications, and/or initiation of contracts to obtain the needed TB health care services, consistent with current CDC TB guidelines and containing quality assurance provisions to evaluate the delivery of the services. Lead: DOJ Collaborators: DIHS, OSHA Start Date: FY 2002 Completion Date: Ongoing

4. For Corrections—Establish networks and relationships with health departments and other key agencies (i.e., health care providers, for the homeless, migrant centers, community-based organizations) to enable continuity of services and follow-up for prisoners and INS detainees upon release or parole. Lead Agencies: DOJ, HRSA Collaborating Agencies: DOJ, CDC, NTCA Start Date: FY 2002 Completion Date: Ongoing	a) Identify barriers (geographic, technical, and legal) to patients treatment, health department access to essential health care records, and communication between corrections and health department staff. Leads: FBOP, DIHS — Collaborators: NCHSTP, D&R, NTCA Start Date: FY 2002 — Completion Date: Ongoing b) Ensure TB continuity of care for prisoners leaving the correctional system and INS detainees leaving the detention system while still on treatment for TB or latent TB infection. Leads: FBOP, DIHS — Collaborators: NCHSTP, D&R, NTCA Start Date: FY 2002 — Completion Date: Ongoing

5. For American Indians/Alaska Natives (AI/AN)—Provide training and education of health care workers and strive to maximize related cultural competency among health care workers who serve American Indians and Alaska Natives. Lead Agency: IHS Collaborating Agencies: HRSA, CDC, DOL Start Date: FY 2003 Completion Date: Ongoing	a) Evaluate training needs of health care providers, mid-level practitioners, and public health staff. Identify most effective methods of delivering information. Lead: IHS — Collaborators: NCHSTP, NIOSH, BPHC, OSHA Start Date: FY 2003 — Completion Date: FY 2003 b) Based on results of step a) above, develop training modules and formal plan for disseminating training throughout IHS, tribal, and urban facilities serving AI/AN. Implement training in pilot sites to evaluate effectiveness. Leads: IHS, NCHSTP, NIOSH, BPHC, OSHA — Collaborator: None Start Date: FY 2003 — Completion Date: FY 2003 c) Fully implement national training plan for all IHS, tribal, and urban facilities serving AI/AN. Lead: IHS — Collaborators: NCHSTP, NIOSH, OSHA Start Date: FY 2004 — Completion Date: Ongoing
6. For American Indians/Alaska Natives—Disseminate information/ education about systems of care and include AI/AN in education/ information dissemination. Lead Agency: IHS Collaborating Agencies: CDC, NTCA Start Date: FY 2003 Completion Date: Ongoing	a) Identify most effective methods of delivering information. Lead: IHS — Collaborator: NCHSTP Start Date: FY 2003 — Completion Date: FY 2003 b) Collect, develop, and package information relevant to IHS, tribal, and urban health program practitioners. Lead: IHS — Collaborator: NCHSTP Start Date: FY 2003 — Completion Date: FY 2003 c) Disseminate information to IHS, tribal, and urban health program practitioners. Lead: IHS — Collaborator: NCHSTP Start Date: FY 2003 — Completion Date: Ongoing

7. For American Indians/Alaska Natives—Improve contacts between IHS providers and state TB control programs to make work complementary rather than competitive; identify and address gaps in services between IHS and public health agencies; and share assets. Lead Agency: IHS Collaborating Agencies: CDC, NTCA Start Date: FY 2003 Completion Date: FY 2005	a) Evaluate effectiveness, using formal program reviews, of IHS/state TB control program interactions in each state with a sizable number of AI/ANs. Identify most effective methods of delivering information. Lead: IHS — Collaborators: NCHSTP, NTCA Start Date: FY 2003 — Completion Date: FY 2004 b) Address gaps in services identified above. Lead: IHS — Collaborators: NCHSTP, NTCA Start Date: FY 2003 — Completion Date: FY 2005

8. For American Indians/Alaska Natives—Provide tuberculin testing and related treatment for persons with diabetes. Lead Agency: IHS Start Date: FY 2003 Completion Date: Ongoing	a) Develop a plan to reach all IHS, tribal, and urban AI/ANs with diabetes. Secure adequate tribal and IHS consultation to ensure success of any plan implemented. Lead: IHS — Collaborator: None Start Date: FY 2003 — Completion Date: FY 2005 b) Implement plan to test all IHS, tribal, and urban AI/ANs with diabetes for latent TB infection. Lead: IHS — Collaborator: None Start Date: FY 2003 — Completion Date: Ongoing c) Implement plan to treat all IHS, tribal, and urban AI/ANs with diabetes found to have latent TB infections that have not had documented adequate treatment. Lead: IHS — Collaborator: None Start Date: FY 2004 — Completion Date: Ongoing
9. For persons who may move between localities, states and/or countries—enable tracking of TB-related health care records (including detainees, prisoners) among U.S. health departments and health care providers. Lead Agency: CDC Collaborating Agencies: HRSA, DOJ, USMS, INS, NTCA Start Date: FY 2002 Completion Date: FY 2003	a) Review policies and processes for tracking TB-related health care records and convene a meeting of interested parties to develop comprehensive recommendations for tracking of TB-related health care records among U.S. health departments and health care providers. Lead: NCHSTP — Collaborators: DIHS, USMS, D&R, SITD, NCID, FBOP, NTCA Start Date: prior to FY 2002 — Completion Date: FY 2003

10. For INS detainees who are under treatment for TB, form a DHHS and DOJ workgroup to review policy issues that may improve the completion of TB treatment rates among detainees who are released before their treatment regimen is completed. Lead Agency: CDC Collaborating Agencies: HRSA, DOJ, USMS, INS, NTCA Start Date: FY 2002 Completion Date: FY 2003	a) Review and analyze available data on INS detainees identified with active TB while in custody and review policies and practices that could be modified to help ensure that all INS detainees with TB who are released prior to completion of treatment actually have continuity of care and drugs to improve their chances for completing treatment for TB. Lead: NCHSTP — Collaborators: DIHS, USMS, D&R, SITD, NCID, FBOP, NTCA Start Date: FY 2002 — Completion Date: FY 2003

11. For persons outside the U.S.—educate and train panel physicians and civil surgeons to ensure provision of quality service, and develop educational materials for immigrants and refugees undergoing TB screening during the U.S. visa application process. Lead Agency: CDC Collaborating Agencies: DOS, DOJ, NTCA Start Date: FY 2002 Completion Date: FY 2004	a) Develop and implement a multi-platform training program with training materials and modules to educate and train panel physicians and civil surgeons in the new Technical Instructions for screening for TB disease and latent TB infections. Leads: NCID, NCHSTP — Collaborators: AND, CA, NTCA Start Date: FY 2002 — Completion Date: FY 2004 (1) After completion and approval of the TB component of the revised Technical Instructions, complete and finalize the print-based training modules for the revised instructions, new medical forms and worksheets, and specific clinical, radiologic, and laboratory training in the area of TB screening, diagnosis, and treatment. Leads: NCID, NCHSTP — Collaborators: CA, AND Start Date: FY 2002 — Completion Date: FY 2004 (2) Develop and implement a multi-platform educational program for immigrant visa applicants abroad, refugees, and adjustment-of-status applicants in the U.S. who are being screened by panel physicians and civil surgeons to ensure that they can clearly understand the objectives and benefits of the medical screening components of the examination and the importance and methods of follow-up evaluations and treatment options. This step should include development of educational material for immigrants and refugees undergoing TB screening by panel physicians and civil surgeons about their TB status, and their responsibilities, options, and benefits of follow-up and treatment in the U.S. Educational material will include written and videotaped materials in appropriate languages explaining the process in a non-threatening manner. Development will begin by focusing on high-prevalence countries that significantly impact on U.S. morbidity (Mexico, Philippines, Vietnam, China, Haiti, and India). Leads: NCID, NCHSTP — Collaborators: AND, CA, NTCA Start Date: FY 2002 — Completion Date: FY 2004

12. For persons born outside the U.S.—explore feasibility of targeted testing of immigrants, refugees, and selected groups of temporary visa holders. Lead Agencies: CDC, DOS Start Date: FY 2002 Completion Date: FY 2006	a) Explore the feasibility of targeted testing for latent TB infection among U.S. overseas visa applicants (i.e., immigrants) with plans for long-term U.S. residence by developing pilot studies in crucial regions of the world with high TB prevalence rates (as identified by WHO. Determine the most effective methods and sites for screening for tuberculosis and ensuring appropriate therapy. Leads: NCID, NCHSTP, CA — Collaborator: None Start Date: FY 2002 — Completion Date: FY 2005 b) Evaluate the feasibility of screening for TB disease and latent TB infection among selected groups of temporary visa holders. Leads: NCID, NCHSTP, CA — Collaborator: None Start Date: FY 2003 — Completion Date: FY 2006
13. For persons born outside the U.S.—determine the immigration status of foreign-born TB patients, how they came to medical attention, and how their cases may have been prevented; and develop follow-up recommendations. Lead Agency: CDC Collaborating Agency: NTCA Start Date: FY 2002 Completion Date: FY 2004	a) Conduct a study of immigration status of foreign-born TB patients, how they came to medical attention, insurance coverage, and how their cases may have been prevented. Lead: NCHSTP — Collaborator: NCID Start Date: FY 2002 — Completion Date: FY 2003 b) Develop comprehensive recommendations for surveillance (including immigration status), recommended follow-up diagnostic evaluations, treatment, contact investigations, and prevention of TB in foreign-born persons. Leads: NCHSTP, NCID — Collaborator: NTCA Start Date: FY 2003 — Completion Date: FY 2004

14. For homeless populations—enable tracking of health care records between health department TB programs and health care providers. Lead Agencies: HRSA, CDC Collaborating Agencies: HUD, NTCA Start Date: FY 2003 Completion Date: FY 2004	a) Evaluate outcomes of treatment completion, contact investigation, and treatment of latent TB infection in selected homeless populations. Lead: BPHC — Collaborators: NCHSTP, HUD, NTCA Start Date: FY 2002 — Completion Date: FY 2004
15. For homeless populations—ensure that homeless persons have access to low- or no-cost skilled TB-related screening, treatment, and prevention services provided by culturally competent providers. Lead Agencies: HRSA, CDC Collaborating Agencies: HUD, NTCA Start Date: FY 2002 Completion Date: Ongoing	a) Evaluate outcomes and cost effectiveness of targeted tuberculin skin test activities and completion of treatment of latent TB infection in selected homeless populations. Lead: BPHC — Collaborators: NCHSTP, HUD, NTCA Start Date: FY 2002 — Completion Date: Ongoing

16. For homeless populations—provide incentives to homeless persons to ensure completion of treatment for latent TB infection. Lead Agencies: HRSA, CDC Collaborating Agencies: HUD, NIH, SAMHSA, NTCA Start Date: FY 2003 Completion Date: Ongoing	a) Provide housing as an incentive. Leads: NCHSTP, HUD — Collaborators: BPHC, NTCA Start Date: FY 2003 — Completion Date: Ongoing b) Reduce barriers for homeless persons to substance abuse treatment and relapse prevention programs. Leads: NIDA, SAMHSA — Collaborator: NCHSTP, NTCA Start Date: FY 2003 — Completion Date: Ongoing

C. Activities for Developing New Tools

The goal of TB elimination cannot be reached with the tools that are currently available. TB elimination will require an increased investment in TB research to develop a more effective vaccine, as well as new diagnostic tools and drugs to more rapidly and reliably diagnose and shorten treatment for all persons with latent and active TB, including those afflicted with MDR TB.

IOM Recommendation 5.1: "To advance the development of tuberculosis vaccines..."

Strategies	Action Steps
1. Implement the Blueprint for Tuberculosis Vaccine Development. Lead Agency: NIH Collaborating Agencies: CDC, FDA Start Date: FY 2002 Completion Date: FY 2012 - 2027	a) Conduct basic science research aimed at understanding host and bacterial factors associated with mycobacterial dormancy and disease, and identifying protective antigens and virulence genes. Leads: NIAID, NHLBI — Collaborators: NCID, CBER Start Date: FY 2002 — Completion Date: FY 2002-2009 b) Expand the TB vaccine candidate screening program. Lead: NIAID — Collaborator: None Start Date: FY 2002 — Completion Date: FY 2012 c) Standardize vaccine production and testing, including identification and validation of correlates of protective immunity for potential use in clinical trials. Lead: NIAID — Collaborators: NHLBI, NCHSTP Start Date: FY 2002 — Completion Date: FY 2012 d) Coordinate and conduct vaccine safety and immunogenicity studies. Lead: NIAID — Collaborator: NHLBI Start Date: FY 2002 — Completion Date: FY 2014

1. Continued from above.	e) Facilitate the development of vaccine efficacy endpoints. Lead: CBER — Collaborators: NIAID, NCHSTP Start Date: FY 2002 — Completion Date: FY 2012-2017 f) Facilitate and support public/private partnerships. Lead: NIAID — Collaborator: NCHSTP Start Date: FY 2002 — Completion Date: FY 2017-2022 g) Establish an international network of field sites for vaccine testing, including characterization of the target populations. Lead: NIAID — Collaborator: NCSHTP Start Date: FY 2002 — Completion Date: FY 2007 h) Conduct clinical efficacy trials of new vaccines. Lead: NIAID — Collaborator: NCHSTP Start Date: FY 2007 — Completion Date: FY 2012-2027 i) Coordinate vaccine development efforts with other agencies and stakeholders. Lead: NIAID — Collaborators: NCHSTP, NHLBI, CBER Start Date: FY 2002 — Completion Date: 2017-2022

2. Facilitate related U.S. regulatory review and introduction of improved TB vaccines for use in the U.S. Lead Agencies: FDA, CDC Collaborating Agency: NIH Start Date: 2002 Completion Date: 2012-2022	a) Assist researchers and manufacturers in the development of new TB vaccines that are pure, potent, safe, and effective; develop potency assays to test biologic activity of TB vaccines; provide guidance for the preclinical testing of TB vaccines; organize regulatory workshops to promote good manufacturing practices (GMPs) in vaccine production; and help develop protocols and standardized assays for human clinical investigation of TB vaccines. Lead: CBER — Collaborators: NCSHTP, NIAID Start Date: FY 2002 — Completion Date: FY 2012-2022 b) Undertake steps to introduce new vaccine(s) for use in target populations; conduct demonstration projects to identify impediments to uptake of new vaccine(s); issue guidelines on the use of new TB vaccine(s) through the CDC Advisory Committee for Immunization Practices and Advisory Council for the Elimination of Tuberculosis; support vaccine programs through CDC TB cooperative agreements; and support vaccine implementation programs in target populations. Leads: NCSHTP, NIP — Collaborators: CBER, NIAID Start Date: Post vaccine approval — Completion Date: 5 years post-approval

IOM Recommendation 5.2: "To advance the development of diagnostic tests and new drugs for both latent infection and active disease, action plans should be developed and implemented..."

Strategies	Action Steps
1. Develop new diagnostics for latent TB infection including more specific tests to counter the problems of bacillus Calmette-Guerin (BCG) vaccination and nontuberculous mycobacteria (NTM) sensitization and methods to identify those infected persons at highest risk of progression to active TB, including persons co-infected with HIV. Start Date: FY 2002 Completion Date: 2010-2012	a) Explore and support mechanisms to increase private sector participation in developing improved TB diagnostics. Lead: NIAID, NCHSTP — Collaborators: CDRH, USAID Start Date: FY 2002 — Completion Date: FY 2010-2012 b) Improve and develop better molecular epidemiological tools for use in contact investigation. Lead: NCHSTP, NIAID — Collaborator: CDRH Start Date: FY 2002 — Completion Date: FY 2007

2. Develop and evaluate new and improved diagnostics for rapid and sensitive diagnosis of active TB, including the identification of drug-resistant strains and TB in HIV-infected persons. Lead Agencies: NIH, CDC Collaborating Agencies: FDA, USAID Start Date: FY 2002 Completion Date: FY 2010-2012	a) Enable expedited FDA review of new diagnostics for latent and active TB and MDR TB, including those for use in different risk groups. Lead: CDRH — Collaborator: CBER Start Date: FY 2002 — Completion Date: Ongoing b) Develop "standard" animal models of latent and active TB infection. Leads: NIAID, NHLBI — Collaborator: None Start Date: FY 2002 — Completion Date: FY 2007-2009 c) Conduct epidemiologic studies on immunologic and genetic markers of disease progression and protection. Leads: NIAID, NHLBI, NCHSTP — Collaborator: None Start Date: FY 2002 — Completion Date: 2007-2010 d) Conduct research aimed at the improvement of currently available diagnostic tests (e.g., smear microscopy, culture and susceptibility testing). Leads: NCHSTP, PHPPO, NIAID — Collaborator: USAID Start Date: FY 2002 — Completion Date: FY 2007 e) Support and conduct research and development (up to and including field tests and regulatory approval/ clearance) of diagnostic tools for latent and active TB, including MDR TB, with improved sensitivity and specificity in adults and children in both high and low endemic rate settings. Leads: NIAID, NCHSTP — Collaborators: NCID, NIOSH, CDRH, USAID Start Date: FY 2002 — Completion Date: FY 2010-1012

2. Continued from above.	f) Assess and promote the most effective combinations/algorithms of new diagnostic tests for smear, culture, direct detection, and drug susceptibility testing. Lead: PHPPO — Collaborators: NCID, NCHSTP, CDRH, USAID Start Date: FY 2002 — Completion Date: Ongoing
3. Expand clinical research and evaluate the overall effectiveness of current and novel treatments for latent TB, active TB, and MDR TB Lead Agencies: NIH, CDC Collaborating Agencies: FDA, USAID Start Date: FY 2002 Completion Date: FY 2012	a) Identify shorter regimens to facilitate completion of treatment for TB disease and latent TB infection. Leads: NCHSTP, NIAID — Collaborators: NIDA, USAID Start Date: prior to FY 2002 — Completion Date: FY 2010 b) Expand use of non-human primates for research into vaccines and treatment of infection/disease. Lead: NIAID — Collaborators: CBER, NHLBI, NCHSTP Start Date: FY 2003 — Completion Date: FY 2010 c) Develop improved regimens for treatment of MDR TB and explore new and available agents not currently being used for TB (e.g., immunoregulation therapy and other delivery vehicles), including new indications for existing medications in the treatment of MDR TB. Leads: NIAID, NHLBI, NCHSTP — Collaborator: None Start Date: FY 2002 — Completion Date: FY 2010 d) Expand and support basic, preclinical and clinical development, and testing of novel TB therapeutic candidates. Leads: NIAID, NCHSTP — Collaborators: NIDA, NHLBI, CBER, CDER Start Date: FY 2002 — Completion Date: FY 2012

IOM Recommendation 5. 3: "To promote better understanding of patient and provider nonadherence with tuberculosis treatment recommendations and guidelines, a plan for a behavioral and social science research agenda should be developed and implemented"

Strategies	Action Steps
1. Conduct research to determine the best methods of educating health care providers to recognize TB cases. Lead Agency: CDC Collaborating Agencies: VA, OSHA, NIH, IHS, HRSA, SAMHSA, USAID Start Date: FY 2002 Completion Date: FY 2005	a) Conduct research/demonstration projects with private and public health care providers to determine the most effective and efficient methods of education/intervention to lead to early/correct identification of TB cases. Leads: NCHSTP, NHLBI Collaborators: NIOSH, VHA, OSHA, NIAID, NIDA, Fogarty International Center, IHS, BPHC, HAB, SAMHSA, USAID Start Date: FY 2002 Completion Date: FY 2005

2. Conduct research on methods to maximize completion of therapy (and minimize relapse) for TB disease and maximize completion of treatment for latent TB infection. Lead Agencies: NIH, CDC, INS Collaborating Agencies: HRSA, USAID, DHHS/OGC/PHD Start Date: FY 2002 Completion Date: FY 2004	a) Conduct cost effectiveness studies of utility/benefits of targeted tuberculin skin test (TST) programs in different populations. Lead: NCHSTP — Collaborators: NIAID, NIDA, BPHC, DIHS, NCID Start Date: FY 2002 — Completion Date: Ongoing b) Conduct operational research of case management systems that take into account hard-to-reach populations, such as drug and other substance users, patients and contacts that move across jurisdictional boundaries, etc. Lead: NCHSTP — Collaborator: NTCA Start Date: prior to FY 2002 — Completion Date: Ongoing c) Conduct public health law research on methods to maximize completion of therapy (and minimize relapse) for TB disease and to maximize completion of treatment for latent TB infection. Leads: NCHSTP, HQCOU, PHPPO — Collaborators: DHHS/OGC/PHD; D&R Start Date: FY 2002 — Completion Date: FY 2002 (1) Consult with DHHS and INS legal counsel on existing policies regarding mandatory TB treatment for immigrants seeking admission through legal processes. Leads: CDC/OD/OGC, NCHSTP, HQCOU — Collaborators: DHHS/OGC/PHD; NCID Start Date: FY 2002 — Completion Date: FY 2002 (2) Conduct legal and ethical research on issues related to mandatory completion of TB treatment of the detention populations and possibly other selected populations in the future. Lead: HQCOU — Collaborators: DHHS/OGC/PHD, CDC/OD/OGC, NCHSTP, D&R Start Date: FY 2003 — Completion Date: FY 2004

3. Conduct feasibility research to determine the costs, benefits, effectiveness, and utility of Targeted Testing and Treatment of Latent TB (TTTLTB) programs in different TB high-risk populations. Lead Agency: CDC Collaborating Agencies: NIH, HRSA, IHS, SAMHSA, DOJ, HUD Start Date: FY 2002 Completion Date: FY 2004	a) Conduct evaluation of INS/DIHS teleradiology screening program for illegal aliens in INS detention facilities. Lead: DIHS — Collaborator: None Start Date: FY 2002 — Completion Date: FY 2003 b) Evaluate methods and cost effectiveness of TB/HIV screening and related treatment of latent TB infection in populations at risk for both HIV and TB. Lead: NCHSTP — Collaborators: HAB, SAMHSA, NIDA, NTCA Start Date: prior to FY 2002 — Completion Date: FY 2003 c) Evaluate methods and cost effectiveness of TTTLTB programs for homeless populations. Lead: NCHSTP — Collaborators: BPHC, HUD, SAMHSA, NHLBI Start Date: prior to FY 2002 — Completion Date: FY 2003 d) Evaluate methods and cost effectiveness of TTTLTB programs for correctional facilities. Lead: NCHSTP — Collaborator: FBOP Start Date: prior to FY 2002 — Completion Date: FY 2003 e) Evaluate methods and cost effectiveness of TTTLTB programs among the following foreign-born populations at risk for TB: asylum applicants, newly arrived immigrants and refugees, students, and other TB at-risk foreign-born populations (to be identified). Lead: NCHSTP — Collaborators: NCID, D&R Start Date: FY 2002 — Completion Date: FY 2004

3. Continued from above.	f) Evaluate methods and cost effectiveness of TTTLTB programs in drug treatment centers. Leads: NCHSTP, SAMHSA — Collaborators: NIDA, NTCA Start Date: prior to FY 2002 — Completion Date: FY 2004 g) Evaluate methods and cost effectiveness of TTTLTB programs in other high-risk populations including American Indians/Alaska Natives, migrant workers, and other minorities. Leads: NCHSTP, IHS, BPHC — Collaborators: Other agencies as appropriate. Start Date: 2003 — Completion Date: 2004
4. Develop and implement strategies to immediately translate evidence-based knowledge from research into clinical and public health practice. Lead Agency: CDC Collaborating Agencies: All Federal TB Task Force Agencies Start Date: FY 2002 Completion Date: FY 2007	a) Convene meeting of researchers in tuberculosis and related areas to develop implementation strategies based on evidence-based research. Leads: NCHSTP, NIAID, NHLBI, NIDA — Collaborator: None Start Date: prior to FY 2002 — Completion Date: FY 2002 b) Develop 5-year strategic plan for implementation of strategies (strategies defined in researchers meeting); include ongoing monitoring of implementation activities and yearly reconvening of lead researchers. Leads: NCHSTP, NIAID, NHLBI — Collaborators: All Federal TB Task Force members Start Date: FY 2002 — Completion Date: FY 2007 c) Develop criteria for evaluation and funding of key priority projects to implement identified strategies. Leads: NCHSTP, NIAID NHLBI — Collaborator: None Start Date: FY 2003 — Completion Date: FY 2007

5. Support a career track for new TB investigators. Lead Agency: NIH Collaborating Agency: CDC Start Date: FY 2003 Completion Date: 2013	a) Expand training support for early- and mid-career investigators pertinent to improving TB care. Lead: NIAID Collaborators: NHLBI, NCHSTP Start Date: FY 2003 Completion Date: 2013

D. Global U.S. Actions in Response to the Institute of Medicine Report on TB: *Ending Neglect: The Elimination of Tuberculosis in the United States*.

This brief but important section has been developed by a smaller group that includes representation from the U.S. Agency for International Development, the National Institutes of Health, and the Centers for Disease Control and Prevention.

IOM Recommendation 6.1: "To decrease the number of foreign-born individuals with tuberculosis in the United States, to minimize the spread and impact of multidrug-resistant tuberculosis, and to improve global health..."

Strategies	Action Steps
1. In collaboration with the World Health Organization (WHO), develop models for diagnosis and treatment of MDR TB in countries with high MDR TB rates. Lead Agencies: CDC, USAID Collaborating Agency: NIH Start Date: FY 2002 Completion Date: Ongoing	a) Implement and expand model directly observed treatment, short course (DOTS) programs to prevent further creation of MDR TB caused by improper treatment of new TB patients. Leads: NCHSTP, USAID — Collaborator: NIAID Start Date: prior to FY 2002 — Completion Date: Ongoing b) Develop and implement pilot DOTS-Plus projects to treat existing MDR TB patients and prevent MDR TB. Leads: NCHSTP, NCID, USAID — Collaborator: None Start Date: FY 2002 — Completion Date: Ongoing c) Assist in the development of "Centers of Excellence" to ensure that MDR TB is addressed, to build high-grade local capacity, and to serve as regional training centers for professionals from other countries. Leads: NCHSTP, USAID — Collaborators: NIOSH, NCID, PHPPO, NCID, NIAID, Fogarty International Center Start Date: prior to FY 2002 — Completion Date: Ongoing d) Evaluate the cost effectiveness and appropriate use of rapid methods for diagnosis of MDR TB. Leads: NCHSTP, NIAID, USAID — Collaborator: None Start Date: prior to FY 2002 — Completion date: FY 2005 e) Conduct drug resistance surveillance to measure the extent of MDR TB and to determine optimal approaches to treatment, specific to given locations. Leads: NCHSTP, USAID — Collaborator: NIAID Start Date: prior to FY 2002 — Completion date: Ongoing

2. Provide international technical and programmatic assistance aimed at reducing the impact of TB globally. Lead Agencies: CDC, USAID, NIH Start Date: FY 2002 Completion Date: Ongoi ng	a) Provide technical assistance to countries for TB surveillance. Leads: NCHSTP, GAP, USAID — Collaborators: NCID, PHPPO Start Date: prior to FY 2002 — Completion Date: Ongoing b) Provide technical assistance to improve and enhance TB laboratory capabilities. Leads: NIAID, NCHSTP, PHPPO, USAID — Collaborators: Fogarty International Center, GAP, NCID Start Date: prior to FY 2002 — Completion Date: Ongoing c) Develop and promote WHO/IUATLD/CDC national external quality assessment guidelines to monitor and improve the quality of AFB microscopy. Lead: PHPPO — Collaborators: NCHSTP, USAID Start Date: FY 2002 — Completion Date: Ongoing

2. Continued from above.	d) Conduct operational research to improve diagnosis and treatment of HIV-associated TB. Leads: NCHSTP, GAP, USAID, NIAID — Collaborators: Fogarty International Center, NTCA, PHPPO Start Date: prior to FY 2002 — Completion Date: Ongoing e) Conduct large-scale feasibility and cost-effectiveness studies of various regimens for the treatment of latent TB infection in HIV-infected persons. Leads: NIAID, NCHSTP, GAP, USAID — Collaborator: None Start Date: prior to FY 2002 — Completion Date: Ongoing f) Provide technical assistance for developing and implementing institutional infection control strategies. Leads: NCHSTP, USAID — Collaborator: NCID Start Date: prior to FY 2002 — Completion Date: Ongoing g) Provide onsite technical assistance to national TB control programs. Leads: NCHSTP, GAP, USAID — Collaborator: None Start Date: prior to FY 2002 — Completion Date: Ongoing

3. Strengthen TB research capability in high-burden countries to enhance ability to develop and test improved treatment, prevention, and control strategies. Lead Agencies: CDC, NIH, USAID Collaborating Agency: None Start Date: FY 2002 Completion Date: Ongoing	a) Expand and conduct training and technology transfer in high-burden countries. Leads: NCHSTP-GAP, NIAID, USAID, Fogarty International Center, NHLBI — Collaborators: NCID, PHPPO Start Date: prior to FY 2002 — Completion Date: Ongoing b) Enhance needed infrastructure, including laboratory facilities and Internet connectivity. Leads: NCHSTP-GAP, USAID, NIAID — Collaborators: GAP, NCID, PHPPO, Fogarty International Center Start Date: prior to FY 2002 — Completion Date: Ongoing c) Conduct clinical trials of novel therapeutic, diagnostic, and prevention strategies in partnership with high-burden countries. Leads: NIAID, NCHSTP-GAP, USAID — Collaborator: None Start Date: prior to FY 2002 — Completion Date: Ongoing

E. Assessing the Impact of Actions Taken

IOM Recommendation 7.3: "To assess the impacts of these recommendations and to measure progress toward accomplishing the elimination of tuberculosis...."

Strategies	Action Steps
1. The Advisory Council for the Elimination of Tuberculosis (ACET) and the Federal TB Task Force will annually monitor the federal response to this IOM report. In addition to regular conference calls, the TB Task Force will meet annually for a face-to-face meeting to review progress toward achievement of the planned activities listed in this report.	ACET has agreed to implement recommendation 7.3 and to monitor and evaluate this plan (see page 5). To facilitate the process CDC is working to generate a list of indicators for monitoring progress.

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Glossary €

ACET	Advisory Council for the Elimination of Tuberculosis (DHHS)
AND	Office of Adjudications (INS)
AHCRQ	Agency for Health Care Research and Quality (DHHS)
BCG	Bacillus Calmette-Guérin
BICE	Bureau of Immigration and Customs Enforcement (DHS), formerly INS (DOJ)
BPHC	Bureau of Primary Health Care (HRSA/DHHS)
CA	Consular Affairs (DOS)
CBER	Center for Biologics Evaluation and Research (NIH/DHHS)
CDC	Centers for Disease Control and Prevention (DHHS)
CDER	Center for Drug Evaluation and Research (FDA/DHHS)
CDRH	Center for Devices and Radiological Health (FDA/DHHS)
CMS	Centers for Medicare and Medicaid Services (DHHS)
CSAT	Center for Substance Abuse Treatment (SAMHSA/DHHS)
DASTLR	Division of AIDS, STD, and TB Laboratory Rsearch (NCHSTP/ CDC/DHHS)
DGMQ or DQ	Division of Global Migration and Quarantine (NCID/CDC/DHHS)
DHHS	Department of Health and Human Services
DHS	Department of Homeland Security
DIHS	Division of Immigration Health Services (BPHC/HRSA/DHHS)
D&R	Office of Detention and Removal (INS/DOJ)
DOJ	Department of Justice
DOL	Department of Labor
DOS	Department of State
DOT	Directly observed therapy
DOTS	Directly observed treatment, short course
DTBE	Division of Tuberculosis Elimination (NCHSTP/CDC/DHHS)
FBOP	Federal Bureau of Prisons (DOJ)

FDA	Food and Drug Administration (DHHS)
GAP	Global AIDS Program (CDC/DHHS)
GMPs	Good manufacturing practices
HAB	HIV/AIDS Bureau (HRSA/DHHS)
HEDIS	Health Plan Employer Data and Information Set
HQCOU	Office of General Counsel (INS)
HIV	Human immunodeficiency virus
HRSA	Health Resources and Services Administration (DHHS)
HUD	Department of Housing and Urban Development
IHS	Indian Health Service (DHHS)
INS	Immigration and Naturalization Service (DOJ)
IOM	Institute of Medicine
IUATLD	International Union Against Tuberculosis and Lung Disease
LHDs	Local health departments
LTBI	Latent tuberculosis infection
MDR TB	Multidrug-resistant TB
NCHSTP	National Center for HIV, STD, and TB Prevention (CDC/DHHS)
NCID	National Center for Infectious Diseases (CDC/DHHS)
NHLBI	National Heart Lung and Blood Institute (NIH/DHHS)
NIAID	National Institute of Allergy and Infectious Diseases (NIH/DHHS)
NIDA	National Institute on Drug Abuse (NIH/DHHS)
NIOSH	National Institute for Occupational Safety and Health (CDC/DHHS)
NIP	National Immunization Program (CDC/DHHS)
NTCA	National Tuberculosis Controllers Association
NTM	Nontuberculous mycobacteria
OGC/PHD	Office of the General Counsel, Public Health Division (DHHS)
OHAH	Office of HIV and AIDS Housing
OMH/PHS	Office of Minority Health, Public Health Service (DHHS)

ORR	Office of Refugee Resettlement (INS)
OSHA	Occupational Safety and Health Administration (DOL)
PHPPO	Public Health Practice Program Office (CDC/DHHS)
PRM	Bureau of Population, Refugees and Migration (DOS)
RHA	Regional Health Administrator (PHS/DHHS)
RVCT	Report of Verified Case of Tuberculosis
SAMHSA	Substance Abuse and Mental Health Services Administration (DHHS)
SITD	Office of Strategic Information and Technology Development (INS/DOJ)
TIMS	Tuberculosis Information Management System (CDC TB software)
TST	Tuberculin skin test
TTTLTB	Targeted testing and treatment of latent TB
USAID	U.S. Agency for International Development (DOS)
USMS	U.S. Marshals Service
VA	Department of Veterans Affairs
VHA	Veterans Health Administration

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