

**Strategic Plan for the Elimination of
Tuberculosis in Wisconsin
Goals, Objectives and Action Steps for
2000 - 2002**



**Wisconsin
Department Of Health & Family Services**

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Strategic Plan for the Elimination of Tuberculosis in Wisconsin

"Careful attention must be paid to ensuring that TB control programs become what they need to be rather than maintained as they have been." - Institute of Medicine report *Ending Neglect: The Elimination of Tuberculosis in the United States*.

Purpose

In 1999, the Centers for Disease Control and Prevention (CDC) and the Advisory Council for the Elimination of Tuberculosis (ACET) renewed their commitment to tuberculosis elimination as first published in the 1989 document *A Strategic Plan for the Elimination of Tuberculosis in the United States*. This plan established a national goal of tuberculosis (TB) elimination, defined as a case rate of less than 1 case / 1,000,000 population by 2010, with an interim target of 3.5 cases / 100,000 population by the year 2000. Although Wisconsin's tuberculosis incidence rate of 2.1/100,000 population is below the interim target rate, that rate has generally not changed in over 10 years. The Wisconsin tuberculosis case rate would need to decline by 95% over the next 10 years (9-10% per year) to achieve the TB elimination goal of 1 case per 1,000,000 by 2010. Given the past stability of the case rate in Wisconsin, a plan of action was deemed necessary to facilitate that decrease.

The purpose of the Wisconsin Department of Health and Family Services, Division of Public Health, Bureau of Communicable Diseases, Wisconsin Tuberculosis Program (hereafter referred to as the Wisconsin TB Program) is to oversee, manage, and facilitate activities that assure identification and proper treatment of persons with tuberculosis, and to prevent transmission of *Mycobacterium tuberculosis* to others. Specific responsibilities include the following:

- Maintain a comprehensive statewide surveillance system to determine the extent of tuberculosis and monitor for changes in trends.
- Manage grants, contracts, and payments for drugs and therapy-related services delivered at the local level.
- Provide technical assistance, consultation, professional education, and training to local health departments (LHDs) and other affiliated agencies.
- Develop and distribute professional educational materials to local agencies and health professionals.
- Implement policies and procedures for the surveillance, investigation, prevention, and control of tuberculosis.
- Establish and maintain specialized screening, education, and intervention programs for persons considered at high risk for tuberculosis.

- Conduct special epidemiologic investigations and studies of significance to the prevention and control of tuberculosis.
- Apply epidemiologic principles to the prevention and control of morbidity and mortality related to tuberculosis in Wisconsin.

The local health department (LHD) is responsible for TB patient management, receiving technical support from the Wisconsin TB Program. All LHDs provide basic tuberculosis services, with the City of Milwaukee Health Department providing comprehensive tuberculosis services in a public TB clinic. Basic tuberculosis services include tuberculin skin testing, patient assessment and referral for medical care, delivery of medication, contact investigation, and directly observed therapy.

The Wisconsin TB Program recognizes that involvement of local and state government agencies, private health care providers, community clinics, community-based organizations, and health care facilities will be needed to achieve the goal of tuberculosis elimination. The development of this plan included participation from representatives of the various public and private partners and includes action steps for all of these partners. Major responsibility for implementing the plan is attributed to the Wisconsin TB Program and LHDs.

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The Wisconsin Tuberculosis Program is responsible for the distribution of the Strategic Plan and the latest national information on tuberculosis. LHDs, in turn, are expected to share this document and the latest national information with their community providers.

In 1998, the American Lung Association of Wisconsin (ALA/W) conducted a review of the Wisconsin TB Program using the expertise of outside reviewers. Many of the recommendations of the review team were incorporated into this plan.

Value Statement

The Division of Public Health, Wisconsin Tuberculosis Program and partners in community health will foster well being through tuberculosis control and prevention in the state of Wisconsin by methods that:

- Ensure the availability of tuberculosis treatment services for all individuals with infection or disease and
- Enhance coordination of efforts through education and communication.

Goal

The following strategic plan, covering 2000-2002, has been developed to reduce the occurrence of tuberculosis disease in Wisconsin by ensuring the availability of tuberculosis treatment services for individuals with infection or disease and preventing further tuberculosis infection in Wisconsin.

Organization

The *Strategic Plan for the Elimination of Tuberculosis in Wisconsin* (the Plan) includes action steps to be completed at the state and local level, by public and private partners. It is not expected that every partner will complete every action step. Action steps should be undertaken with consideration of the following priorities:

1. diagnosing all TB cases and ensuring that patients complete appropriate therapy
2. enhancing the effectiveness of contact investigation activities and ensuring the prompt identification and completion of treatment of contacts with latent TB infection (LTBI) and
3. expanding the testing and treatment of latent TB infection to persons in other high-risk populations .

Partners that successfully perform the highest-priority activities and have declining morbidity should begin developing and implementing plans for the next level of priority activities, based on local epidemiologic findings. (CDC. Essential components of a tuberculosis prevention and control program. MMWR 1995; 44(No. RR-11):3.)

The Plan is divided into the following four areas:

- Improving Existing Surveillance Methods
- Improving Disease Treatment Methods
- Improving Case Prevention Methods
- Improving Program Evaluation Methods

Within each focus, goals, objectives, and action steps are organized in order of decreasing priority

Evaluation components are incorporated as objectives into each goal. The topic “Improving Program Evaluation Methods” includes broader goals for evaluation of state and local Wisconsin TB Program performance.

Following the body of the Plan are three Appendices. Appendix 1 addresses Wisconsin’s performance toward meeting national objectives. Appendix 2 addresses the methods that will be used to calculate outcomes and monitor progress toward meeting Strategic Plan objectives. Appendix 3 is the Glossary of terms used throughout the document.

Limitations

In the face of declining tuberculosis rates nationwide, resources for tuberculosis elimination may become scarcer. It will be the responsibility of all parties interested in tuberculosis elimination to advocate for sufficient funding and creative problem solving in order to conduct necessary activities. Data collection and analyses suggested in the Plan will assist advocacy efforts.

This Plan is intended to be a dynamic, evolving document. Components of lower priority activities are left vague with the understanding that refinement will be an ongoing process.

Abbreviations and Definitions of Terms

AIDS registry

Listing of individuals with HIV infection or acquired immunodeficiency syndrome (AIDS) disease reported to the Wisconsin AIDS/HIV Program.

Acid-fast bacilli (AFB)

Organisms that retain certain stains even after being washed with acid alcohol. Most are mycobacteria. When seen on a stained smear of sputum or other clinical specimen, a diagnosis of tuberculosis should be considered.

Aggregate Report for Tuberculosis Program Evaluation (ARPE)

Standard report form used to report activities related to contact investigation, targeted testing, and treatment of latent TB infection to CDC.

ATS

American Thoracic Society

Active TB disease

Clinical and/or radiographic evidence of current TB. Established most definitively by isolation of *M. tuberculosis* on culture.

Adherence to treatment

Following the recommended course of treatment by taking all the prescribed medications for the entire length of time necessary.

Aggregate analysis

Generation of summary statistics to identify problems or deviations from objectives

Airborne precautions

Measures designed to reduce the risk of airborne transmission of infectious agents such as *M. tuberculosis*.

ALA/W

American Lung Association of Wisconsin

APIC

Association for Professionals in Infection Control and Epidemiology, Inc.

"B" notification - B-1 or B-2

Division of Quarantine classifications for individuals who arrive in the US as immigrants (including those on K1 visas for fiancée(e)s) or refugees who had abnormalities identified on chest radiographs that are indicative of tuberculosis. Prior to leaving their home country they were determined to be non-infectious. These classifications require follow-up once the individual arrives at their US destination. A "yellow slip" is sent to the Wisconsin TB Program and then forwarded to LHDs with a cover letter indicating what actions need to be taken.

Centers for Disease Control and Prevention (CDC)

The Federal agency charged with the primary responsibility for providing funding and other resources, leadership and coordination to national tuberculosis control and prevention efforts.

Case

Refers to a patient with tuberculosis disease.

Case analysis

Individual review of specified variables from a tuberculosis case record to assess the patient's clinical status, the adequacy of the medication regimen, treatment adherence or completion, and the results of contact investigation.

Case consultation

Providing professional or technical advice or opinions to those providing services to TB cases.

Case management

Functions which ensure that an individualized treatment plan is developed for a person with tuberculosis infection and that appropriate treatment and support services are provided to ensure the desired outcomes in a timely, effective and coordinated manner.

Chest x-ray (CXR)

Clinically evaluated

Medical exam that includes a chest radiograph, review of TB signs and symptoms and collection of clinical specimens when appropriate.

Cohort analysis

Summary review of specified variables from tuberculosis case records counted during a specific time period to further characterize problems.

Confirmed TB disease

Clinically active TB with characteristics that have met the official CDC criteria to be counted as a case of tuberculosis.

Community Based Organization (CBO)

An agency that provides social services or support to a designated geographic or demographic area.

Contact

Person who has shared the same air space with a person with infectious TB for a sufficient period of time to make transmission of infection likely.

Close contact - Persons who have shared the same air space with a person with infectious TB, and is at high risk of developing infection with *M. tuberculosis* because of the length of time and intensity of exposure or their vulnerability such as young children, the immune compromised, etc.

Other than close contact - Person who has shared the same air space with a person with infectious TB, but is at a lower risk than a close contact of developing infection with *M. tuberculosis* because of the length of time and/or intensity of exposure.

Contact investigation

The process of identifying, examining, evaluating, and treating all persons who are at risk of infection with *M. tuberculosis* due to recent exposure to infectious tuberculosis or suspected tuberculosis.

Completion of therapy

The point at which a patient has taken all the medication prescribed and clinical indicators (chest radiograph, sputum culture

conversion, symptom improvement, etc.) of cure have been collected and documented.

Culture

Organisms grown on media (substances containing nutrients) so that they can be identified; a **positive** culture for *M. tuberculosis* contains live tubercle bacilli, whereas a **negative** culture contains no detectable live tubercle bacilli.

Culture confirmed tuberculosis

Tuberculosis disease that has been confirmed by culture positive identification on a clinical specimen.

Directly Observed Therapy (DOT)

Supervised therapy that involves the direct visual observation by a health care provider (e.g., outreach worker or nurse) or other reliable person (e.g., homeless shelter worker) of a patient's ingestion of medication.

Dispensary (see Public Health Dispensary)

DNA fingerprinting

Laboratory technique used to identify related strains of *M. tuberculosis*.

Drug susceptibility testing

Laboratory tests that determine whether the tubercle bacilli cultured from a patient are susceptible or resistant to various anti-TB drugs.

Enablers

Anything that assists the patient to more readily complete therapy such as bus tokens, groceries, gas vouchers, etc.

Fee exempt testing

Laboratory testing that is available without charge to local health departments from the Wisconsin State Laboratory of Hygiene for purposes of public health.

Health care provider

Physicians and nurses licensed under s. 441 and 448 of Wisconsin Statutes.

High risk

Refers to circumstances or behaviors that increase the chances that a person

becomes infected, breaks down with or fails treatment for tuberculosis.

Active TB disease – TB disease in a patient that is at greater risk of treatment failure due to drug resistance, immune suppression, or non-compliance.

Latent TB infection - TB infection in a patient that is highly likely to result in active disease and the patient may easily become infectious.

Population - Certain demographic groups that are more likely to be exposed to and infected with TB, including close contacts of people with infectious TB.

Human service agency

An agency that provides primary health care, health education, and/or social services.

Infection Control Practitioner (ICP)

Individual responsible for surveillance, prevention and control of infectious disease transmission within a health care facility.

Infectious TB

Tuberculosis of the respiratory tract, capable of transmitting infection to others.

Incentives

Rewards in return for compliance with medical regimen.

Incidence

A measure of the frequency of new cases of disease (tuberculosis) in a particular population, which occurred during a specified period of time (e.g. the number of new TB cases reported per 100,000 population in Wisconsin during a calendar year).

Index case

The first case brought to the attention of the LHD. Usually becomes the focus for an initial contact investigation.

Interventions

Techniques used to modify an outcome.

Isolation

The separation from other persons of a person with infectious tuberculosis in a place and under conditions that prevent the transmission of the infection.

Isolation order

A legal document from a local health officer requiring an individual with suspected tuberculosis to remain in isolation.

Local health department (LHD)

A municipal agency established in accordance with s. 250.01(4) Wis. Stats. that provides surveillance, investigation, control and prevention of communicable diseases.

Local health officer

The individual who is in charge of a local health department as defined in s. 250.06 Wis. Stats.

Latent TB Infection (LTBI)

Infection with *M. tuberculosis*, usually detected by a positive PPD skin test result, in a person who has no symptoms of active TB and who is not infectious.

Memorandum of Understanding (MOU)

An agreement between two or more agencies on resources that will be provided by one to the other(s).

Medical risk factor

Patient medical conditions that increase the likelihood that latent TB infection will progress to TB disease (e.g., HIV infection, diabetes, end state renal disease).

Mycobacteriology Laboratory Network (MLN)

Network of Wisconsin laboratories that perform testing for mycobacteria that include *M. tuberculosis*.

Operational case analysis

Individual review of specified variables from a tuberculosis case record to assess the patient's clinical status, the adequacy of the medication regimen, treatment adherence or completion, and the results of contact investigation. - OR - Program evaluation of policies and procedures to investigate the causes of problems.

Outbreak of tuberculosis

The occurrence of tuberculosis (disease or infection) in individuals of the same community or region with a recognized pattern of transmission.

Outcome indicators

Specific criteria used to monitor quality and effectiveness of tuberculosis care - usually a final health consequence (e.g. sputum culture conversions, chest x-ray improvement, completion of therapy, etc.)

Pill counts

A method for monitoring adherence to a treatment regimen. A public health nurse or designee counts the pills left in the medication bottles to check if the patient has taken the required doses.

Pill minders

A tool to assist patients in being adherent to treatment. A container for medication marked with the appropriate dose for different days and/or time of day.

Preventable case

A case of tuberculosis in which an opportunity for disease prevention was missed (e.g. failure to provide treatment for identified LTBI, failure to identify or examine exposed person during a contact investigation, delayed identification of a case, resulting in prolonged transmission).

Prevalence

The number of instances of a given disease (tuberculosis) or conditions (LTBI) in a given population at a specified point in time (e.g. the number of tuberculosis patients currently receiving treatment or the number of individuals living with LTBI).

Previously infected contacts

Contacts to a person with active tuberculosis that had previously tested positive for TB infection.

Public health dispensary

State certified program of a local health department to prevent and control tuberculosis disease and infection by diagnosis, treatment and case management. Certified public health dispensaries are eligible for reimbursement for services with state funds.

Qualitative case analysis

Individual review of specified variables from a tuberculosis case record to assess the patient's clinical status, the adequacy of the medication regimen, treatment adherence or

completion, and the results of contact investigation. - OR - Evaluation of quality of care given by a program by summarizing individual reviews.

Quality assurance

The process through which the quality of care and the effectiveness of the TB control program is reviewed and evaluated.

Reactivating TB disease

TB disease in a patient who has already been treated for active disease and for some reason has again become ill with active tuberculosis.

Repository of TB isolates

Storage of patient isolates of *M. tuberculosis* (statewide) in a central location.

Respiratory isolation

The separation from other persons of a person with infectious pulmonary or laryngeal tuberculosis in a place and under conditions designed to reduce the risk of airborne transmission of infectious agents such as *M. tuberculosis*.

Report of Verified Case of Tuberculosis (RVCT)

Standard case report form used to report tuberculosis cases to CDC.

Reportable disease

Diseases identified in Appendix A of Wisconsin Administrative Rule HFS. 145 that must be reported to a local health officer and the state Division of Public Health.

Second round testing

Testing done in a contact investigation on identified contacts 90 days post their last exposure to the individual with infectious tuberculosis.

Source case investigation

An investigation done to identify the infectious person who is believed to have transmitted infection to the index case.

Sputum culture conversion

Best indicator for the evaluation of treatment. Sputum collected after the initial positive culture and the initiation of treatment that document the conversion of

sputum culture from positive to negative for *M. tuberculosis*.

Sputum smear positive

Sputum that is positive for AFB when appropriately stained and viewed under a microscope. Individuals with TB who are sputum smear-positive for AFB are considered more infectious than those with smear-negative sputum.

Standards

Level of excellence regarded as a measure of adequacy

Outcome – Specific, measurable result (e.g. percent of patients completing therapy).

Process – Set of criteria based on specific activities performed (e.g. number of patients tested, number of nursing visits, etc.).

Suspect

An individual likely to have clinically active TB. The individual has signs or symptoms suggestive of tuberculosis that have not yet been confirmed by clinical and/or laboratory criteria.

Surveillance

Activities related to finding cases of TB, guiding them into the health care system, and maintaining records on their cases for such purposes as identifying high-risk groups and trends in morbidity and related mortality. Includes activities related to identifying and maintaining records on persons with tuberculosis infection as well, in order to identify candidates for preventive therapy and, in institutional settings, to identify the quality of infection control practices.

Technical assistance (TA)

Building the capacity of personnel by providing information and training as needed based on the needs of the organization and the expertise of the provider.

Targeted testing

Testing for LTBI among persons at high risk for TB who would benefit from treatment for LTBI, if detected.

Tuberculosis (TB)

An infectious disease of man and animals caused by the species *Mycobacterium tuberculosis complex* and characterized by the formation of tubercles and caseous necrosis in the tissues.

TB case

Clinically active TB in a person whose case characteristics have met official Centers for Disease Control and Prevention criteria to be counted as a case of tuberculosis.

TB disease

Disease caused by *M. tuberculosis* usually found in the lungs, but possibly anywhere in the body. Differentiated from TB infection by the identification of *M. tuberculosis* from a culture or other clinical findings suggestive of TB, i.e., abnormal chest x-ray, positive PPD, clinical improvement after treatment with multiple anti-TB drugs, epidemiologic findings, etc.

TB infection

The condition in which organisms capable of causing TB disease enter the body and elicit a response from the host's immune defenses. TB infection may or may not lead to a clinical case.

TB isolate

A group of organisms isolated or separated from a specimen and identified as *M. tuberculosis*.

TB skin test

Often referred to as the Mantoux skin test, the TB skin test (TST) is the standard method of identifying individuals with TB infection. The test is performed by placing an intradermal injection of 0.1 ml of purified protein derivative (PPD) in the inner surface of the forearm.

TB suspect

An individual likely to have clinically active TB. An individual is considered a TB suspect when one or more of the following are present:

- a prescription is written for two or more tuberculosis drugs to be taken for a period of more than 2 months
- clinical signs and symptoms (such as a chest radiograph) suggestive of tuberculosis disease or

- a smear is positive for acid fast bacilli (AFB) in a patient with no previous history of a non-tuberculosis mycobacteria.

TB Suspect Case Data

A form created by the Wisconsin TB Program with numerous data elements on patient history, reporting, laboratory specimens and chest x-rays.

Tuberculosis Information Management System (TIMS database)

A software program supplied by the Centers for Disease Control and Prevention (CDC) that facilitates the management of TB cases and the tracking and reporting of TB control program activities.

Tuberculosis Related Benefit (TR Benefit)

A Medicaid benefit for individuals with LTBI or TB disease that covers out patient medical costs.

Unusual occurrence of TB

When a case of TB occurs that was not preventable by conventional wisdom in a person that is not a member of a high-risk group.

Wisconsin Tuberculosis Program (Wisconsin TB Program)

The state TB control and prevention program located in the Division of Public Health, Bureau of Communicable Diseases.

Improving Existing Surveillance Methods

Tuberculosis (TB) is a reportable disease in the State of Wisconsin. The identification and reporting of TB cases, suspected cases and contacts is sometimes delayed and incomplete. This can result in transmission of TB and delayed treatment of latent TB infection (LTBI). Reporting TB cases in Wisconsin must be timely, accurate and complete so that patients can receive appropriate TB treatment and potential outbreaks can be prevented.

To address this, health care providers, local health departments (LHDs), laboratories and human service agencies in Wisconsin must be aware of the signs and symptoms of tuberculosis, reporting criteria and the process of reporting suspect and active tuberculosis cases.

TB Surveillance is the ongoing systematic collection, analysis, and dissemination of data on the magnitude and distribution of TB. This information determines the most beneficial use of scarce resources and promotes effective interventions. The development of new data collection tools and information networks are critical components in enhancing surveillance.

For Improving Existing Surveillance Methods, the following goals have been established:

- Identify TB suspects early
- Ensure immediate reporting of each TB case and suspect case to the local health officer or the TB program.
- Identify any outbreak or any other unusual occurrence of TB disease in Wisconsin
- Target surveillance for TB infection and disease

Goal 1: Identify TB suspects early

OBJECTIVE 1:

At least 95% of persons reported with TB disease or suspect TB will have been identified and referred for tuberculosis related medical evaluation within 72 hours of initial contact with a health care provider or any other identified in the action steps that follow.

Action steps:

1. The Wisconsin TB Program will revise the TB Suspect Case Data form and distribute it to all LHDs. Distribution of and training for the revised TB Suspect Case Data form will be completed by January 2001.

2. Beginning in January 2001, LHDs will collect the information needed to complete the revised TB Suspect Case Data form and report all the data elements to the Wisconsin TB Program.
3. The Wisconsin TB Program will periodically review the data from the TB Suspect Case Data form to determine:
 - whether the case was reported in a timely manner,
 - whether the case preventable,
 - where efforts should be targeted to enhance prompt referral and outreach education.
4. Outreach and education strategies will be prioritized and re-prioritized according to this data review. Targets for education include the following:
 - physicians, physician assistants, nurse practitioners, nurses, employee health and infection control practitioners
 - clinics, hospitals and health centers that serve populations at risk for TB
 - human services agencies that serve populations at risk for TB
 - cultural and business organizations that support or employ persons at risk for TB and/or Community Based Organizations (CBOs) that may have access to these populations.
5. By March 2000 and periodically, the American Lung Association of Wisconsin (ALA/W) and the Wisconsin TB Program will sponsor a physician TB education seminar to include early identification and management of tuberculosis.
6. Beginning in 2001, the Wisconsin TB Program (and LHDs when appropriate) will work with the ALA/W to develop a plan for educating business and government leaders about TB.
7. The Wisconsin TB Program will continue to review the contract between the Wisconsin Division of Health Care Financing and health maintenance organizations (HMOs) to ensure that the highest standards for TB reporting and care are maintained.
8. The Wisconsin TB Program with the ALA/W will evaluate the need for physician advocacy for quality TB care in HMO clinics and hospitals.

Goal 2: Ensure immediate reporting of each TB case and suspect case to the local health officer or the TB Program

OBJECTIVE 1:

The local health officer or the Wisconsin TB Program will receive at least 95% of all TB suspect case reports within 24 hours when one or more of the following indicators are present:

- a prescription is written for two or more tuberculosis drugs to be taken for period of more than 2 months
- clinical signs and symptoms (such as a chest radiograph) suggest tuberculosis disease or
- a smear is positive for acid fast bacilli (AFB) in a patient with no previous history of a non-tuberculosis mycobacteria.

Action steps:

1. The Wisconsin TB Program will regularly review with LHDs reporting criteria, the statutory power of the local health officer and the importance of timely reporting.
2. LHDs will educate area health care providers of reporting criteria, the statutory requirements of reporting to the local health officer and the importance of timely reporting.
3. The LHD and the Wisconsin TB Program will make copies of the Wisconsin Communicable Disease Statutes available to all health care providers.
4. The Division of Public Health will continue to distribute communicable disease report forms (DPH 4151) to health care providers in Wisconsin.
5. Wisconsin TB Program and LHD staff will routinely monitor the time between the diagnosis of tuberculosis and the date the case is reported to the local health department and the Wisconsin TB Program. Delays in reporting of more than 2 work days will be discussed with health care providers by the local health officer (or their designee) within one week after the delay is noted. The local health officer will address appropriate action by the provider to prevent similar delays in the future. If deemed necessary, the local health officer may take legal action as specified in s. 252.05 (11) of the Wisconsin State Statutes.
6. Educational presentations on tuberculosis at the state and local level will contain reporting information.
7. The Wisconsin TB Program will work with Division of Public Health, Bureau of Communicable Diseases in the development of an integrated database that may allow the electronic reporting of suspects.

OBJECTIVE 2:

The Wisconsin TB Program, using the CDC reporting system, will report all newly diagnosed cases of TB to CDC. There will be at least 95% completeness for CDC selected variables.

Action steps:

1. Required data elements of the Report of Verified Case of Tuberculosis (RVCT) form (pages one, two and the initial drug susceptibility report) will be completed by the LHD and entered into the TIMS database by the central office within 2 months after a case has been counted by the Wisconsin TB Program.
2. The case completion report will be completed and verified by the local health department and entered into the TIMS database by the Wisconsin TB Program within one month after an individual discontinues treatment.
3. Quarterly data analysis will be done by the Wisconsin TB Program to verify that all TB cases have all the required information completed.

OBJECTIVE 3:

The Wisconsin TB Program and LHDs will actively work with infection control practitioners (ICPs) in Wisconsin health care facilities to promote the most current TB prevention/education standards within their facilities and in their shared communities.

Action steps:

1. Relevant components of the Strategic Plan for the Elimination of Tuberculosis in Wisconsin will be presented at chapter meetings of the Association for Professional in Infection Control and Epidemiology (APIC) by a TB Program representative beginning in May 1, 2000.
2. Beginning no later than June 1, 2000, a representative from the Wisconsin TB Program will offer "TB Updates" to regional and statewide meetings of APIC.
3. By January 1, 2001, staff from the Wisconsin TB Program will serve as the key contact person at the state level for infection control practitioners regarding infection control and TB.
4. The Wisconsin TB Program will strongly encourage enhanced communication, technical assistance and education between LHDs and local ICPs.
5. The Wisconsin TB Program will encourage a LHD representative to periodically attend local APIC chapter meetings by January 2002.

Goal 3: Identify any outbreak or any other unusual occurrence of TB disease in Wisconsin

OBJECTIVE 1:

The Wisconsin State Laboratory of Hygiene (WSLH) with the cooperation of Mycobacteriology Laboratory Network (MLN) will perform DNA fingerprinting on 95% of initial TB isolates within 4 months of receipt.

Action steps:

1. WSLH will continue to organize annual meetings of the MLN.
2. By January 2001, 95% of clinical labs in Wisconsin that provide TB mycobacterial services will be active participants in the MLN.
3. WSLH will begin making onsite visits to other microbiology labs by July 2001.
4. By January 1, 2001 all TB isolates will be forwarded to WSLH from other microbiology labs within 10 days of identification.
5. By July 1, 2001, the WSLH will be able to perform appropriate DNA fingerprinting on TB isolates.
6. All initial TB isolates received by WSLH will have DNA fingerprinting by January 1, 2002.

OBJECTIVE 2:

All unusual occurrences of TB disease in Wisconsin will be investigated using all available resources to define epidemiological and relational links.

Action steps:

1. The Wisconsin TB Program will analyze data at least annually to identify and define an unusual occurrence of TB.
2. Refer to Improving Existing Surveillance Methods, goal 3, action steps 1 through 6 (p.18).
3. Refer to Improving Case Prevention Methods goals and action steps (p.35 - 37).
4. Refer to Improving Existing Surveillance Methods goal 4, action steps 1 through 5 (p.19).

Goal 4: Target surveillance for TB infection and disease

OBJECTIVE 1:

All diagnosed cases of active tuberculosis disease will be reported to the Wisconsin TB Program.

Action steps:

1. Monthly the Wisconsin TB Program will continue to conduct TB and acquired immunodeficiency syndrome (AIDS) registry matches to ensure completeness of reporting of HIV and TB co-infected patients to both systems.
2. The WSLH will assist the Wisconsin TB Program in an annual evaluation of TB case reporting through MLN.
3. The Wisconsin TB Program will do death certificate queries by December 2002 to verify that any deceased person listed with a tuberculosis diagnosis matches with the cases reported.
4. The Wisconsin TB Program will evaluate the completeness of reporting by June 2003 by identifying and investigating at least one population-based secondary source (such as Medicaid billed services or pharmacy records) to find potentially unreported TB cases.

OBJECTIVE 2:

At least 80 % of people receiving skin testing by LHDs will have an identified medical or population risk factor.

Action steps:

1. The Wisconsin TB Program will provide training and education on the use of the Aggregate Reports for Tuberculosis Program Evaluation (ARPE) for program evaluation by December 2001.
2. The Wisconsin TB Program will provide training and guidance about targeted skin testing to all LHDs beginning in 2001. As a result of this training, LHDs will identify:
 - appropriate populations in their community needing targeted skin testing,
 - appropriate assessment methods for these populations (Mantoux skin testing, versus chest radiographs, symptom assess and education) and
 - where to best direct their resources to serve high risk populations.Follow-up will be done to evaluate the integration of this information into local health department planning.
3. The Wisconsin TB Program will begin distribution to LHDs of a simple-to-use,

computerized database, for evaluation of targeted testing and treatment of LTBI activities by December of 2001.

4. Beginning in 2002, LHDs will collate and analyze data annually on all skin tests placed by their agency using the ARPE.
5. Beginning with data collected in 2002, LHDs will analyze cumulative skin test data on a 5-year basis to determine trends.

OBJECTIVE 3:

LHDs will conduct appropriate surveillance for TB disease and LTBI.

Action Steps:

1. LHDs will periodically assess the prevalence, incidence and socio-demographic characteristics of active disease cases and infected persons in the community. Using these data, LHDs will initiate group-specific targeted testing in their areas.
2. Surveillance information will also be used by LHDs to:
 - develop primary prevention activities,
 - build community capacity for appropriate TB skin testing and any other manifestations of core public health functions of assurance and policy development.

Improving Disease Treatment Methods

Treatment of active TB disease should be viewed as both a personal health measure intended to cure tuberculosis and as a public health measure intended to stop transmission of TB in the community. In Wisconsin, some individuals diagnosed with tuberculosis do not complete adequate treatment for a variety of reasons. Additionally there are other persons who complete tuberculosis treatment but do not have documentation of clinical indicators of cure (e.g. sputum culture conversion, chest radiograph improvement). These individuals may be at risk for TB disease recurrence and may again threaten the public's health.

To Improve Disease Treatment Methods the following goals have been established:

- Active TB cases in Wisconsin will be treated with appropriate and adequate therapy based on the American Thoracic Society (ATS) and CDC guidelines.
- Drug Susceptibility testing will be performed and documented on all initial TB isolates and repeated as clinically indicated.
- For each case of active TB, there will be documented improvement based on clinical, laboratory, and/or radiologic findings and documented adherence to therapy until completion.
- Laboratory results will be reported promptly.

Goal 5: Active TB cases in Wisconsin will be treated with appropriate and adequate therapy based on the ATS and CDC guidelines

OBJECTIVE 1:

At least 90% of all individuals with reported cases of tuberculosis disease will complete an ATS/CDC recommended regimen of TB drug therapy within 12 months.

Action steps:

1. The Wisconsin TB Program will develop guidelines for effective practice related to active TB disease case management. Guidance to LHDs on case management components will include topics such as:
 - obtaining approved medications through the Wisconsin TB Program
 - ensuring adherence to therapy
 - reviewing cases with the Wisconsin TB Program
 - quality assurance protocols for TB casesand will be distributed to LHDs by July 2001. Based on this information LHDs will establish standard protocols for effective practice by January 2002.

2. Electronic Teleconferencing Network (ETN) training on these components of the case management guidelines will be held by Fall 2001 for LHDs.
3. The Wisconsin TB Program will provide LHDs with anti-tuberculosis medication for suspected or confirmed cases of active TB disease and infected individuals. This process will:
 - emphasize decentralization and
 - promote the use of strategies to improve adherence.
4. The LHD and the Wisconsin TB Program will review all initial medication requests for active TB treatment and will investigate medical rationale for regimens that do not fit existing protocols.
5. Based on information obtained about a clinician's medical rationale, the Wisconsin TB Program will approve payment and provision of some regimens that follow acceptable deviations from protocol that have been pre-established through consultation with the TB Program medical consultant.
6. The prescribing physician will be referred to the TB Program medical consultant for regimen changes in which the medical rationale does not warrant the deviations from approved treatment regimens. In such situations, the Wisconsin TB Program will not approve payment for or supply the medications until the TB Program medical consultant has approved the regimen.
7. The Wisconsin TB Program will actively promote the use of DOT for all active TB cases (per DOT guidelines).
8. For all patients not on DOT, the LHD and the Wisconsin TB Program will use all means at their disposal to promote adherence and assure appropriate dosing (e.g. pill minders, bubble packaging, fixed-dose combination pills).
9. LHDs and health-care providers will regularly monitor patients for adverse reactions to TB medications according to client conditions and program protocol.
10. The Wisconsin TB Program and the ALA/W will explore various strategies to strengthen physician education about TB.

Goal 6: Drug susceptibility testing will be performed and documented on all initial TB isolates and repeated as clinically indicated

OBJECTIVE 1:

Drug susceptibility testing will be performed and reported on the initial isolates of at least 95% of patients with culture confirmed tuberculosis.

Action steps:

1. LHDs will verify that drug susceptibility testing is initiated immediately after identification of *M. tuberculosis*.
2. By July 2001, the Wisconsin TB Program will establish guidelines for effective practices related to case management, which will include information on the need for susceptibility testing and the frequency by which it should be repeated. Based on this information LHDs will establish standard protocols on this guidance by January 2002.
3. Through the MLN, laboratories will be informed of the statutory requirement to ensure that susceptibility testing is performed.

Goal 7: For each case of active TB there will be documented improvement based on clinical, laboratory, and /or radiologic findings and documented adherence to therapy until complete

OBJECTIVE 1:

Summary data from completed cases will reflect care given and documented according to state and national objectives.

Action steps:

1. The Wisconsin TB Program will develop guidelines for effective practice related to active TB disease case management. Guidance to LHDs on case management components will include topics such as:
 - assessment
 - facilitating medical and radiological exams
 - sputum collection and induction
 - working effectively with the laboratory
 - case reviews with the Wisconsin TB Program for ensuring completion of therapy
 - quality assurance and case monitoring for tuberculosis clients.These guidelines will be distributed to LHDs by July 2001. Based on this information LHDs will establish standard protocols for effective practice by January 2002.

2. By 2003 the Wisconsin TB Program, in conjunction with ALA/W will establish a staff-training curriculum to be used by LHDs.

OBJECTIVE 2:

By completion of therapy, 95% of active TB cases with pulmonary involvement will have documented:

- sputum specimen collections to verify culture conversion for patients with initially culture positive sputum,
- CXR improvement and
- interventions and evaluations of treatment adherence emphasizing DOT.

Action steps:

1. The LHD will develop and implement an individualized case management plan with input from the patient and the health care provider. The plan will include at least the following:
 - using outreach staff from the same culture and linguistic background as the patient (as possible),
 - educating patients about their TB care,
 - using incentives and enablers to improve adherence and
 - facilitating access to health and social services.
2. LHDs will assess every patient for DOT and ensure that DOT is implemented per LHD policy and procedure.
3. LHDs will submit required reports to Wisconsin TB Program as outlined in case management guidelines.
4. The TB Program and LHDs will review case management activities of all TB cases. This review will verify that appropriate activities are being conducted and documented by the LHD in the patient's record. During the reviews, the Wisconsin TB Program will prompt LHDs to submit required reports.
5. Specific concerns about the medical management of any TB patient will be brought to the attention of the TB Program's medical consultant. Plans for resolution will be determined on a case by case basis.

OBJECTIVE 3:

By completion of therapy, 95% of active cases of extra pulmonary TB (including disseminated TB with no pulmonary involvement) will have documented:

- clinical improvement (includes surgical removal) and
- treatment adherence through completion of therapy.

Action steps:

1. The LHD will develop and implement an individualized case management plan with input from the patient and the health care provider. The plan will include at least the following:
 - using outreach staff from the same culture and linguistic background as the patient as much as possible,
 - educating patients about their TB care,
 - using incentives and enablers to improve adherence and
 - facilitating access to health and social services.
2. LHDs will assess every patient for DOT and ensure that DOT is implemented per LHD policy and procedure.
3. LHDs will submit to Wisconsin TB Program required reports as outlined in case management guidelines for effective practice.
4. The TB Program and LHDs will review case management activities of all TB cases. This review will verify that appropriate activities are being conducted and documented by the LHD in the patient's record. During the reviews, the Wisconsin TB Program will prompt LHDs to submit required reports.
5. Specific concerns about the medical management of any TB patient will be brought to the attention of the TB Program's medical consultant. Plans for resolution will be determined on a case by case basis.

Goal 8: Ensure timely reporting of laboratory results**OBJECTIVE 1:**

For at least 80% of initial diagnostic specimens received by a laboratory for TB diagnosis, the following laboratory turnaround times will be met:

- reporting of acid-fast examinations of specimens within one working day after specimen receipt,
- reporting of *M. tuberculosis* complex within 14 – 21 days from specimen receipt.

Action steps:

1. Information given at MLN meetings will support and encourage adherence to statutory reporting criteria.
2. The WSLH will maintain state-of-the-art mycobacteriology technology to continue offering the best timely, high quality services possible to the citizens of Wisconsin.
3. The WSLH will continue to provide mycobacteriology services to LHDs through fee-exempt means.

4. Through the MLN, the WSLH will develop a repository of TB isolates to validate testing results of drug susceptibility testing statewide by January 1, 2000.
5. The WSLH will continue to monitor the capability of laboratories offering mycobacteriology services (including susceptibility testing) within the State of Wisconsin with a goal of establishing conformity with national mycobacteriology standards.
6. The MLN will inform all laboratories of statutory requirements and provide assistance with internal laboratory quality assurance evaluations.
7. WSLH will prepare a biannual summary of laboratory data to monitor quality assurance evaluation results.
8. The WSLH will continue “marketing” the “state of the art” mycobacteriology services provided by the WSLH to hospitals and practitioners within Wisconsin.

Improving Case Prevention Methods

Preventable TB cases continue to occur in Wisconsin. A preventable case includes all those for whom one or more of the recommended intervention activities could have been used but were not. Intervention activities include: prompt diagnosis, use of infection control procedures, contact investigation and examination, treatment and reporting of cases (suspected or diagnosed active tuberculosis), and treatment for latent TB infection (LTBI).

In concert with national TB control efforts, the Wisconsin TB Program and LHD priorities are:

1. finding persons with active disease and ensuring completion of treatment;
2. finding and evaluating contacts of those with active disease and ensuring completion of appropriate treatment;
3. screening persons at high risk for infection and ensuring completion of appropriate treatment.

The Wisconsin TB Program will promote the concept of “a decision to test is a decision to treat.” This does not mean that discrimination regarding who “deserves” treatment will govern who receives testing. Populations “at risk” are to be objectively determined based on epidemiologic evidence.

To prevent infection in persons potentially exposed to an infectious case of tuberculosis and to prevent active tuberculosis disease among contacts and other infected persons for whom treatment of LTBI is recommended, the following goals were developed:

- Stop the transmission of tuberculosis
- Identify and treat newly infected contacts
- Treat other identified infected persons
- Identify, evaluate and treat locally identified high risk groups

Goal 9: Stop transmission of tuberculosis

OBJECTIVE 1:

95% of persons reported with confirmed or suspected infectious tuberculosis will be placed in air borne precautions/isolation and started on an American Thoracic Society (ATS) approved regimen within three days of findings that establish TB suspect status.

Action steps:

1. Treatment for active tuberculosis disease will follow action steps outlined in Improving Disease Treatment Methods.
2. By September 2000, the Wisconsin TB Program will establish guidelines on effective practices related to isolation and confinement for clients outside the hospital for LHDs to adapt and implement by March 2001.
3. LHDs will be encouraged to adapt and implement the Wisconsin TB Program guidelines for establishing effective practices related to confinement of individuals who do not adhere to an isolation order. The TB Program will distribute this guidance to LHDs by September 2000. Based on this information, LHDs will establish standard protocols by March 2001 for non-compliant cases.
4. The Wisconsin TB Program will investigate possible locations and costs for inpatient isolation. By September 2000 the Wisconsin TB Program will delineate payment responsibility.
5. The Wisconsin TB Program will provide guidance to LHDs on the creation of Memoranda of Understanding (MOU) with facilities for providing inpatient care by March 2001. LHDs will establish an MOU with a facility by September 2001.
6. The Wisconsin TB Program and LHDs will maintain a dialogue with institutional infection control practitioners concerning isolation assessment and treatment plans to promote up-to-date policies, procedures and practices for their facilities.
7. The Wisconsin TB Program and LHDs will work with other agencies (e.g. Wisconsin TB Program to work with the Wisconsin Department of Corrections and LHDs to work with area nursing homes and jails) to develop and implement a TB control plan that is setting specific.
8. By October 2001, the Wisconsin TB Program will develop guidelines for an outbreak response plan for LHDs. Based on these guidelines, LHDs will develop an outbreak response plan for their jurisdiction by April 2002.

OBJECTIVE 2:

For each confirmed case of active TB disease in Wisconsin, an analysis will be performed to identify missed opportunities for disease prevention for the purpose of developing elimination goals.

Action steps:

1. Data regarding the length of time individuals with active tuberculosis disease have resided in Wisconsin will be collected and analyzed using the TB Suspect Case Data form beginning January 1, 2001.
2. Data regarding previous skin test results for individuals with active TB disease will be collected and analyzed January 1, 2001 using the TB Suspect Case Data form beginning.
3. Data will be reviewed by April 2002 and an algorithm developed to assign "in-state" and "out-of-state" categories of missed prevention opportunity.
4. The Wisconsin TB Program will establish Wisconsin specific TB elimination goals by 2003.

Goal 10: Identifying and treating newly infected contacts**OBJECTIVE 1:**

Contacts will be identified for at least 90% of sputum smear positive TB cases.

Action steps:

1. LHDs will be encouraged to adapt and implement the Wisconsin TB Program guidelines for establishing effective practices related to contact investigation. The Wisconsin TB Program will distribute this guidance to LHDs by February 2001. Based on this information, LHDs will establish standard protocols for contact investigation by August 2001.
2. Within three days after TB confirmation (CDC case definition) of active pulmonary or laryngeal TB disease, the LHD will interview the client (and appropriate others) and begin clinical evaluations and TB skin testing of all close contacts.
3. For children ≤ 4 years old reported as suspect or confirmed TB cases, source case investigations will be conducted within 1 to 3 days after the LHD receives the report.
4. The Wisconsin TB Program, in conjunction with LHDs, will assess reasons that cases have few (e.g. < 3) or no contacts identified, delays in interviewing cases or evaluating contacts. Strategies to improve areas of concern will be jointly considered.

OBJECTIVE 2:

95% of close contacts to an individual with active TB disease of the respiratory tract will be clinically evaluated and tested within 3 weeks after being identified as a contact to the confirmed case.

Action steps:

1. The LHD will develop and implement a case management plan (including follow-up care, education, and assessment for DOT) for infected contacts within 1 week after they have been identified as skin test positive.
2. Skin testing and medical evaluation for identified close contacts who are young children (≤ 4 years old) or immunosuppressed will be completed no later than 10 days after they have been identified as contacts. These contacts will be placed on appropriate treatment no later than three days after their medical evaluation.
3. Previously infected contacts (with a documented positive skin test) will receive a chest radiograph and medical evaluation.
4. LHDs will submit first-round contact investigation information (clinical evaluation and test results of all close contacts) to the Wisconsin TB Program within 45 days after the case has been identified. Second round skin testing and clinical evaluation results for contacts will be completed and submitted to the Wisconsin TB Program no later than five months after the case has been identified.
5. The LHD case manager for the index case will be responsible for obtaining information on skin test results and completion of therapy information for contacts residing outside the LHD jurisdiction (e.g. those tested by tribal clinics, employers, residential facilities or public health departments outside of the county or state).
6. The Wisconsin TB Program will assist LHDs in the follow-up of contacts living outside of the state.
7. The Wisconsin TB Program will provide brochures and fact sheets that meet the cultural and educational needs of contacts.

OBJECTIVE 3:

Unless medically contraindicated, treatment of newly identified LTBI will begin for 95% of contacts < 15 years of age and 75% of contacts ≥ 15 years of age.

Action steps:

1. The LHD will work with infected contacts to ensure treatment for LTBI is ordered within 7 days of clinical evaluation.
2. LTBI treatment will begin within 7 days after the LHD receives medications.
3. The Wisconsin TB Program will strategize with LHDs for obtaining services for uninsured persons (e.g. TR Benefit, fee-exempt testing through WSLH, public health dispensaries).

OBJECTIVE 4:

85% of contacts started on treatment for newly identified LTBI will complete their regimen.

Action steps:

1. For all individuals receiving medications through the Wisconsin TB Program, LHDs will:
 - monitor client at least monthly for side effects and adherence to treatment for LTBI,
 - determine which adherence strategies (e.g. DOT, pill counts, pill minders, frequent home visits) are indicated,
 - provide and document efforts to promote treatment completion and
 - submit the green “Follow-up on therapy” form (DOH 4125) to the Wisconsin TB Program for LTBI within 1 month
 - after the patient has completed treatment for LTBI

OR

 - after it has been determined that the patient cannot complete treatment within LHD jurisdiction.
2. The Wisconsin TB Program in conjunction with LHDs will assess reasons for contacts who start but do not complete treatment for LTBI and devise strategies for improvement.
3. Semi-annually the Wisconsin TB Program will conduct a status review of all clients receiving medications for LTBI and share the results with LHDs.

OBJECTIVE 5:

The Wisconsin TB Program will evaluate all contact investigation information submitted and provide status reports to LHDs annually.

Action steps:

1. The Wisconsin TB Program will provide training to LHDs on contact investigation data management.
2. LHDs will review results of contact investigations.
3. The Wisconsin TB Program will summarize contact information collected statewide.

Goal 11: Treat other infected persons**OBJECTIVE1:**

For TB infected individuals identified outside of a contact investigation (e.g. work place screening, targeted testing, etc.), 75% of those placed on LTBI treatment will complete their prescribed treatment.

Action steps:

1. The Wisconsin TB Program will establish guidelines for effective practices related to treatment of LTBI for LHDs to adapt and implement. The Wisconsin TB Program will begin distributing this guidance to LHDs by September 2001. Based on this information, LHDs will establish standard protocols related to treatment for LTBI by March 2002.
2. The Wisconsin TB Program will explore strategies with LHDs to obtain services for uninsured persons (e.g. TR Benefit, fee-exempt testing through WSLH, public health dispensaries).
3. For all individuals receiving medications through the Wisconsin TB Program, LHDs will:
 - monitor clients at least monthly for side effects and for adherence to treatment for LTBI,
 - determine which adherence strategies (e.g. DOT, pill counts, incentives, frequent home visits) are indicated,
 - provide and document efforts to promote treatment completion and
 - submit the green "Follow-up on therapy" form (DOH 4125) to the Wisconsin TB Program for LTBI within one month
 - after the patient has completed treatment for LTBI

OR

 - after it has been determined that the patient cannot complete treatment within LHD jurisdiction.
4. Semi-annually the Wisconsin TB Program will conduct a status review of all clients receiving medications for LTBI and share the results with LHDs.

Goal 12: Identify, evaluate and treat high risk groups**OBJECTIVE 1:**

LHDs will identify populations in their jurisdiction at risk for TB disease and LTBI.

Action steps:

1. LHDs will use surveillance data to develop a profile of the high-risk groups in their communities.
2. The Wisconsin TB Program will share information with LHDs on emerging high-risk populations.
3. LHDs will develop relationships with various population groups and community based organizations (CBOs) to identify emerging high-risk groups (e.g. foreign students, immigrants, and migrants).

OBJECTIVE 2:

LHDs will promote evaluation of high-risk populations for TB disease and LTBI.

Action steps:

1. LHDs will identify service providers and key employers of populations at high risk for TB disease and LTBI (e.g. health care providers, AODA treatment programs, nursing homes, providers who serve people with HIV infection and employers of large numbers of foreign-born individuals).
2. LHDs will educate service providers and key employers regarding:
 - local populations at high risk of LTBI and TB and
 - methods of evaluation and treatment protocols for LTBI and TB disease.
3. LHDs and the Wisconsin TB Program will provide appropriate consultation as needed.
4. LHDs will provide training on clinical evaluation and skin testing to service providers.
5. The Wisconsin TB Program will provide brochures and fact sheets that meet the cultural and educational needs of populations at high risk for LTBI and TB disease.
6. The Wisconsin TB Program and LHDs will work with service providers to enhance communication and service delivery so that assessment and treatment is timely, culturally competent, comprehensive and effective.
7. LHDs will determine the most appropriate assessment methods in each high-risk population identified (e.g. symptom evaluation, education, chest radiograph, targeted testing).
8. The Wisconsin TB Program will distribute the latest technical information regarding the evaluation of high-risk populations.

OBJECTIVE 3:

LHDs will promote treatment of populations at risk for LTBI and TB disease.

Action steps:

1. For all individuals receiving medications through the Wisconsin TB Program, LHDs will:
 - monitor clients at least monthly for side effects and adherence to treatment for LTBI,
 - determine which adherence strategies (e.g. DOT, pill counts, incentives, frequent home visits) are indicated,
 - provide and document efforts to promote treatment completion and
 - submit the green “Follow-up on therapy” form (DOH 4125) to the Wisconsin TB Program for LTBI within one month
 - after the patient has completed treatment for LTBI

OR

- after it has been determined that the patient cannot complete treatment.
2. The Wisconsin TB Program will explore with LHDs strategies to obtain services for uninsured persons (e.g. TR Benefit, fee-exempt testing through WSLH, public health dispensaries).
 3. LHDs, with assistance from the Wisconsin TB Program, will evaluate targeted testing initiatives.
 4. Semi-annually the Wisconsin TB Program will conduct a status review of all clients receiving medications for LTBI and share the results with LHDs.

Improving Program Evaluation Methods

Assessment and evaluation of local TB programs enhances prevention and control efforts at both the state and local level. Program assessment and evaluation involves three levels of analysis to identify deviations from established standards:

- Aggregate analysis
- Individual case and cohort analysis, and
- Operational analysis.

All TB program prevention and control related activities should have the following:

- An appropriate evaluation plan
- Capability of measuring data to check program progress toward outcome and process goals/standards
- Capability of sharing data for external evaluation
- Cooperation with a network of other agencies (e.g. institutions, Wisconsin TB Program, other health departments, etc.)
- Shared responsibility for development of appropriate data sets for use as outcomes and process indicators.

Based upon the program assessment and evaluation, a plan for continuous quality improvement will be implemented and sustained. The evaluation steps will be repeated until all the standards are met and on an ongoing basis thereafter.

To improve program evaluation methods, the following goals have been established:

- Define and redefine process and outcome standards
- Measure performance toward meeting process and outcome standards
- Analyze evaluation results and modify intervention and strategies to meet process and outcome standards

Goal 13: Define/redefine process and outcome standards

OBJECTIVE 1:

The Wisconsin TB Program and LHDs will write evaluation plans that include both outcome and process standards for all TB prevention and control activities.

Action steps:

1. The Wisconsin TB Program will annually evaluate progress toward meeting Strategic Plan goals, using objectives in the Plan as outcome indicators, and verifying completion of action steps according to timeline.

2. The Wisconsin TB Program will develop a statewide performance evaluation plan that uses input from outside resources by December 2001. Evaluation will be done on an annual basis to examine performance and make recommendations.
3. The Wisconsin TB Program will review and revise the statewide evaluation based on the outcome of the previous evaluation.
4. The Wisconsin TB Program will identify what LHDs are doing well in TB control and, when needed, offer consultation and technical assistance.
5. The Wisconsin TB Program will assist LHDs in developing an agency-specific evaluation plan with agency appropriate outcome indicators (through individual and case cohort analysis). Examples include ensuring appropriate case management, contact investigation and follow-up for "B" notifications. This will be piloted initially with active programs in 2001 with a projected completion of all programs by the end of 2003.
6. LHDs, with Wisconsin TB Program assistance, will evaluate their TB program performance annually according to Wisconsin TB Program timelines.
7. LHDs will review and revise their evaluation plans based upon the outcome of the annual evaluation.

Goal 14: Measure performance toward meeting process and outcome standards

OBJECTIVE 1:

Statewide and local performance related to TB matters will be measured through data management mechanisms.

Action steps:

1. The Wisconsin TB Program will pilot a simple-to-use computerized database for LHDs to assist in the evaluation of local TB data by December 2000.
2. The Wisconsin TB Program will provide training and technical support to select LHDs in the use of a computerized database beginning in March 2001.
3. The Wisconsin TB Program will evaluate the results of the pilot program and determine further implementation action.
4. Each LHD will identify and implement a data management system that meets their needs according to the Wisconsin TB Program timelines.

5. Each LHD will annually evaluate their TB program to include both quantitative analysis of performance and qualitative indicators of strengths and weaknesses.
6. The Wisconsin TB Program will measure statewide performance based upon data provided by LHDs.

Goal 15: Analyze evaluation results and modify intervention and strategies to meet process and outcome standards

OBJECTIVE 1:

The Wisconsin TB Program, WSLH and all LHDs will use evaluation results to improve their TB control programs.

Action steps:

1. Perform individual case analysis, cohort analysis, and program analysis.
2. Identify deviations from established standards.
3. Prioritize deviations in terms of impact on overall program effectiveness.
4. Beginning with the top priority deviations, but eventually addressing all deviations from established standards,
 - Determine the prime causes of deviation from established standards,
 - and
 - Take action to correct these prime causes of deviation.
5. Continually re-evaluate using steps 1 - 4 above.

Appendix 1 National Tuberculosis Objectives And Wisconsin Performance

The U.S. Centers for Disease Control and Prevention has established several national objectives by which to evaluate state tuberculosis programs. The national objectives were incorporated into the goals and objectives of the plan and state and local objectives were added. The core national objectives for the three priority activities are listed below with Wisconsin performance included as reference. As treatment for tuberculosis continues for an extended period, data for the most recent year with complete data is included.

Priority 1: diagnosing all TB cases and ensuring that patients complete appropriate therapy

National Objective: At least 90% of patients with newly diagnosed TB, for whom therapy for one year or less is indicated, will complete therapy within 12 months.

Wisconsin Performance: 83% of patients with newly diagnosed TB in 1998, for whom therapy for one year or less was indicated, completed therapy within 12 months. (However 96% of all patients completed therapy at some point.)

National Objective: For at least 80% of initial diagnostic specimens received by the public health laboratory for TB diagnosis, the following laboratory turnaround times will be met:

- (a) reporting of smear-positive or smear-negative results of acid-fast examination of specimens within 24 hours of specimen receipt;

Wisconsin Performance: For smear results reported in 1999, 87% were reported with 24 hours of specimen receipt.

- (b) for culture-positive specimens, reporting of *M. tuberculosis* complex or not *M. tuberculosis* complex within 14-21 days from specimen receipt;

Wisconsin Performance: For culture results reported in 1999, 53% were reported as *M. tuberculosis* complex or not *M. tuberculosis* complex within 14-21 days from specimen receipt

- (c) and reporting of drug susceptibility tests for first-line drugs within 15 to 35 days from specimen receipt.

Wisconsin Performance: For *M. tuberculosis* culture positive specimens

during 1999, 86% had drug susceptibility tests for first-line drugs within 15 to 35 days from specimen receipt.

National Objective: For at least 80% of isolates of mycobacteria referred to the public health laboratory for additional TB diagnostic testing, the following laboratory turnaround times will be met:

(a) reporting of isolates as *M. tuberculosis* complex or not *M. tuberculosis* complex within 7 days of isolate receipt,

Wisconsin Performance: For results reported during 1999, 91% were reported within 7 days of isolate receipt.

(b) and reporting of first-line drug susceptibility tests within 10 to 14 days from isolate receipt.

Wisconsin Performance: For results reported during 1999, 62% were reported within 10 to 14 days from isolate receipt.

Priority 2: enhancing the effectiveness of contact investigation activities and ensuring the prompt identification and completion of treatment of contacts with latent TB infection

National Objective: Contacts will be identified for at least 90% of newly reported sputum AFB-smear positive TB cases.

Wisconsin Performance: Contacts were identified for 100% of newly reported sputum AFB-smear positive TB cases in 1999.

National Objective: At least 95% of contacts to sputum AFB-smear positive TB cases will be evaluated for infection and disease.

Wisconsin Performance: 96% of identified contacts to sputum AFB-smear positive TB cases were evaluated for infection and disease in 1999.

National Objective: At least 85% of infected contacts started on treatment for latent TB infection will complete therapy.

Wisconsin Performance: 82% of contacts with newly identified TB infection started on treatment for latent TB infection completed therapy in 1998.

Priority 3: expanding the testing and treatment of latent TB infection to persons in other high-risk populations

National Objective: At least 75% of persons with latent TB infection found through targeted skin testing activities (supported with program resources) and started on treatment for latent TB infection will complete therapy.

Wisconsin Performance: The Wisconsin TB Program has not received nor contributed funds for targeted skin testing activities. However, 65% of persons identified by local health departments and private providers with latent TB infection (non-contacts) and started on state-funded medication during 1998, completed therapy.

Appendix 2 Outcome Calculation Methods

Improving Existing Surveillance Methods

Goal 1, Objective 1

At least 95% of persons reported with TB disease or suspect TB will have been identified and referred for tuberculosis related medical evaluation within 72 hours of initial contact with a health care provider or any other identified in the action steps that follow.

Calculated by comparing the date patient first had contact with a health care provider (or other) for TB-related symptoms (cough, hemoptysis, night sweats, etc.) and date patient was referred for a TB-related medical evaluation (skin test, chest x-ray, sputum collection, etc.)

Goal 2, Objective 1

At least 95% of all TB suspect case reports will be received within 24 hours by the local health officer or the Wisconsin TB Program when one or more of the following indicators are present...

Calculated based on difference between time of report and time “indicator” occurred.

Goal 2, Objective 2

... There will be at least 95% completeness for CDC selected variables.

Calculated based on the percent of patient records with no results or “unknown” in specified fields. Patient records are classified as “complete” or “incomplete” by reviewing each variable. One “incomplete” variable renders the record incomplete.

Goal 2, Objective 3

The Wisconsin TB Program and LHDs will actively work with infection control practitioners (ICPs) in Wisconsin health care facilities to promote the most current TB prevention/education standards within their facilities and in their shared communities.

Progress toward completing action steps will be monitored. Achievement of objective will be based on completion of all action steps.

Goal 3, Objective 1

The Wisconsin State Laboratory of Hygiene (WSLH) will perform DNA fingerprinting on 95% of initial TB isolates within 4 months of receipt.

Calculated using WSLH turnaround time tracking of specimen receipt to reporting of results.

Goal 3, Objective 2

At least 80% of any unusual occurrence of TB disease in Wisconsin will be investigated using all available resources to define epidemiological and relational links.

Outcome calculation will be postponed until completion of Action Step 1.

Goal 4, Objective 1

All diagnosed cases of active tuberculosis disease will be reported to the Wisconsin TB Program.

Calculated based on periodic completeness of reporting studies of laboratory data, death certificates, and other sources.

Goal 4, Objective 2

At least 80% of people receiving skin testing by LHDs will have an identified medical or population risk factor.

Calculated using data collected at the local level. Local health departments will classify skin testing activities due to “medical risk factor,” “population risk factor,” or “administrative” reasons.

Goal 4, Objective 3

LHDs will conduct appropriate surveillance for TB disease and LTBI.

Progress toward completing action steps will be monitored. Achievement of objective will be based on completion of all action steps.

Improving Disease Treatment Methods

Goal 5, Objective 1

At least 90% of all reported cases of tuberculosis disease will complete an ATS/CDC recommended regimen of TB drug therapy within 12 months.

Calculated based on the number of people starting therapy vs. the number of people completing therapy within 12 months. Persons who die before completing therapy, have rifampin-resistant tuberculosis, or are children (under 15 years old) with meningeal or bone and joint TB are excluded from the calculation. Time to complete is calculated as the number of days from start of medication to stopping of medication.

Goal 6, Objective 1

Drug susceptibility testing will be performed on the initial isolates of at least 95% of patients with culture confirmed tuberculosis.

Calculated based on the number of patients with reported drug susceptibility results vs. the number of patients with positive TB cultures.

Goal 7, Objective 1

Summary data from completed cases will reflect care given and documented according to state and national objectives.

Calculation will be based on DOT, culture conversion, and repeat drug susceptibility results recorded in the RVCT and the follow-up chest x-ray, adherence efforts, and compliance documentation recorded in case review notations.

Goal 7, Objective 2

By completion of therapy, 95% of active TB cases with pulmonary involvement will have documented:

- sputum specimen collections to verify culture conversion,
- CXR improvement and
- interventions and evaluations of treatment adherence emphasizing DOT.

Calculation will be based on DOT, culture conversion, and repeat drug susceptibility results recorded in the RVCT and the follow-up chest x-ray, adherence efforts, and compliance documentation recorded in case review notations.

Goal 7, Objective 3

By completion of therapy, 95% of active TB cases ...with no pulmonary involvement will have documented...

Calculation will be based on DOT, repeat drug susceptibility results recorded in the RVCT and the follow-up chest x-ray, adherence efforts, and compliance documentation recorded in case review notations.

Goal 8, Objective 1

For at least 80% of initial diagnostic specimens received by the laboratory for TB diagnosis, the following laboratory turnaround times will be met...

Laboratories will track time from specimen receipt until results are reported. Private labs will report results through the laboratory network. WSLH will report their own results and an aggregate of laboratory network results. Mycobacteria not likely to be pathogenic (*M. gordonae*) will be excluded from the identification turnaround time.

Improving Case Prevention Methods

Goal 9, Objective 1

95% of persons reported with confirmed or suspected infectious tuberculosis will be placed in air-borne precautions and started onwithin 3 days.

Calculated based on time start of medication and isolation and occurrence of indicator.

Goal 9, Objective 2

For each case of active TB disease in Wisconsin, an analysis will be performed to identify missed opportunities for disease prevention for the purpose of developing elimination goals.

The number of cases of reported TB will be compared to the number of cases receiving a “missed opportunity” analysis.

Goal 10, Objective 1

Contacts will be identified for at least 90% of sputum smear positive TB cases.

Calculated based on receipt of contact investigation report.

Goal 10, Objective 2

95% of close contacts to an individual with active TB disease of the respiratory tract will be clinically evaluated and tested within 3 weeks after being identified as a contact to the confirmed case.

Date contact identified will have to be collected and time from identification to evaluation calculated.

Goal 10, Objective 3

Unless medically contraindicated, treatment of newly identified LTBI will begin for 95% of contacts < 15 years old and 75% of contacts [≥] 15 years old.

Reason for not beginning treatment will need to be collected to determine who should be excluded from the calculation.

Goal 10, Objective 4

85% of contacts started on treatment...will complete...

Based on TB Program data comparison of number of contacts with newly identified LTBI placed on therapy vs. number that completed. There will be no exclusions, but reasons for not completing will be sought and analyzed.

Goal 10, Objective 5

The Wisconsin TB Program will evaluate all contact investigation information submitted and provide status reports to LHDs annually.

Based on a “done” vs. “not done” checklist format.

Goal 11, Objective 1

75% of those placed on LTBI ... will complete...

Based on TB Program data comparison of the number of persons placed on therapy vs. the number completing therapy. There will be no exclusions, but reason for not completing will be sought and analyzed.

Goal 12, Objective 1

LHDs will identify populations in their jurisdiction at risk for TB disease and LTBI.

Based on completion of action steps.

Goal 12, Objective 2

LHDs will promote evaluation of high-risk populations for TB disease and LTBI.

Based on completion of action steps.

Goal 12, Objective 3

LHDs will promote treatment of populations at risk for LTBI and TB disease.

Based on completion of action steps.

Improving Case Prevention Methods

Progress toward meeting goals and objectives will be based on completion of action steps.

Appendix 3 CDC Case Definition

TB Surveillance - For the purposes of surveillance, a case of TB is defined on the basis of laboratory and/or clinical evidence of active disease due to *M. tuberculosis* complex.

Laboratory Case Definition

Isolation of *M. tuberculosis* complex from a clinical specimen. The use of rapid-identification techniques for *M. tuberculosis* performed on a culture from a clinical specimen, such as a DNA probes and high-pressure liquid chromatography (HPLC), is acceptable under this criterion.

OR

Demonstration of *M. tuberculosis* from a clinical specimen by nucleic acid amplification (NAA) test. NAA tests must be accompanied by cultures of mycobacterial species. However, for surveillance purposes, CDC will accept results obtained from NAA tests that are approved by the Food and Drug Administration (FDA) and used according to the approved product labeling on the package insert.

OR

Demonstration of acid-fast bacilli (AFB) in a clinical specimen when a culture has not been or cannot be obtained; historically this criterion has been most commonly used to diagnose TB in the postmortem setting.

Clinical Case Definition

In the absence of laboratory confirmation of *M. tuberculosis* complex after a diagnostic process has been completed, persons must have all of the following criteria for clinical TB:

Evidence of TB infection based on a positive tuberculin skin test

AND

One of the following:

- (1) Signs and symptoms compatible with current TB disease, such as an abnormal, unstable (worsening or improving) chest radiograph, or
- (2) Clinical evidence of current disease (e.g., fever, night sweats, cough, weight loss, hemoptysis)

AND

Current treatment with two or more anti-TB medications