Case Management

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Quick Start Check List: Case Management

The tasks listed below should be performed by licensed nursing, medical, and laboratory staff according to Idaho statute.

Steps for Case Management	Instructions and Forms
Follow the steps in this check list when a suspected or confirmed case of tuberculosis disease is reported to the local public health agency.	
Determine when and where to conduct the initial assessment:	Examples of forms can be found in chapter 17. Be sure to consult your local protocols and
 If the patient is hospitalized, conduct the initial assessment during the patient's hospitalization. 	standing orders, too.
 If the patient is not hospitalized, conduct the initial assessment at the first clinic visit or during a home visit. 	
Conduct the initial assessment:	
Visit the patient	
 Obtain or review demographic information 	
 Ascertain the extent of TB illness (See reporting steps below.) 	
Obtain and review the patient's health history	
 Determine infectiousness or potential infectiousness (See isolation steps below.) 	
 Evaluate the patient's knowledge and beliefs about TB 	
Initiate treatment (if not initiated during hospital stay)	
Monitor the TB medication regimen	
Identify any barriers or obstacles to adherence	
Review psychosocial status	
 Identify and document a good history of the patient's social network 	
 Gather information for a possible contact investigation 	
Isolate the patient, if necessary	Recommended Form:
Take personal respiratory precautions, if necessary	 Isolation may be done voluntarily, or a legal order may be issued and presented to the patient (see later verbiage on legal forms)
Report the case to the State TB Program	Examples of forms can be found in chapter 17.
After sufficient information is gathered, develop a treatment plan	Examples of forms can be found in chapter 17.
a caunone pian	Recommended Forms:
Begin implementing the treatment plan:	District-specific forms
 Refer the patient to other healthcare providers, 	
social service agencies, or community organizations	
as needed (case manager would work as liaison for	
patient and other providers)	
 Broker and locate needed services relating to TB 	

 Negotiate a plan for DOT or self-administration evaluation Coordinate strategies to improve adherence 	
Provide directly observed therapy	Instructions: Section #: Case Management Topic: Directly Observed Therapy Recommended Forms: Idaho DOT form
Initiate a contact investigation, if necessary	Instructions: Section #: Contact Investigation Topic: Quick Start Check List
 Conduct ongoing assessment and monitoring: Monitor the clinical response to treatment Determine human immunodeficiency virus (HIV) status and the risk factors for HIV disease, and refer the patient for treatment, if indicated Review the treatment regimen Ensure that medications are ordered and given at the correct time, and in the correct dosage Monitor the side effects of and adverse reactions to medication Assess adherence daily and monthly and identify positive and negative motivational factors influencing adherence Determine the unmet educational needs of the patient Educate the patient about the TB disease process Advocate for the patient with team members and other service providers Review the status of the contact investigation, if one was started 	Examples of forms can be found in chapter 17. Be sure to consult your local protocols and standing orders, too.
 Evaluate case management activities: Monitor the activities against the treatment plan monthly (or more frequently if needed) Report data monthly on the "Tuberculosis Case Update Monthly Report" 	Examples of forms can be found in chapter 17. Forms: District-specific forms
Report monthly to the State TB Program	
Determine whether to continue or discontinue isolation	Examples of forms can be found in chapter 17. Be sure to consult your local protocols and standing orders, too.
Address nonadherence, if necessary: Review with the patient the treatment agreements and directly observed therapy arrangements Educate the patient about tuberculosis and its treatment	Examples of forms can be found in chapter 17. Recommended Forms: District-specific Be sure to consult your local protocols and standing orders, too.

 Refer patient to social services, if necessary Provide incentives and enablers Initiate legal orders, if other measures do not improve adherence 	
Verify the whether treatment has been completed by the following: The total number of doses ingested and The duration of therapy If treatment is not completed within the recommended time frame, contact the State TB Program and assess the patient with a physician to determine continuation of longer therapy	Recommended Forms: RVCT Follow-up 2 should be completed and sent to the state TB program upon completion of treatment Be sure to consult your local protocols and standing orders, too.

Introduction

Purpose

Tuberculosis (TB) case management describes the activities undertaken by the jurisdictional public health agency and its partners to ensure successful completion of TB treatment and cure of the patient. Case management is a system in which a specific health department employee is assigned primary responsibility for the patient, systematic regular review of patient progress is conducted, and plans are made to address any barriers to adherence.

Use this section to understand and follow national and Idaho State guidance to

- conduct initial assessments;
- develop treatment plans for case management activities;
- conduct monthly ongoing assessments;
- monitor adverse reactions to antituberculosis medications and monitor toxicity;
- monitor bacteriologic and clinical improvement;
- verify completion of therapy;
- evaluate case management activities;
- provide directly observed therapy (DOT);
- use incentives and enablers to improve adherence to therapy;
- understand when and how to use legal orders if necessary for adherence to therapy.

One of the four fundamental strategies to achieve the goal of TB control in the U.S. is the early and accurate detection, diagnosis, and reporting of TB cases, leading to initiation and completion of treatment. Completion of a full course of standard therapy is essential to prevent treatment failure, relapse, and the development of drug resistance.³

One reason for failure to complete standard treatment is that patients frequently fail to adhere to the lengthy course of treatment. Poor adherence to treatment regimens might result from difficulties with access to the healthcare system, cultural factors, homelessness, substance abuse, lack of social support, rapid clearing of symptoms, or forgetfulness.⁴

These adverse outcomes are preventable by case-management strategies provided by TB control programs, including use of DOT.⁵ It is strongly recommended that the initial treatment strategy utilize patient-centered case management with an adherence plan that emphasizes DOT.⁶ It is essential to provide patient-centered case management in which treatment is tailored and supervision is based on each patient's clinical and social circumstances. ⁷ Programs utilizing DOT as the central element in a comprehensive,

patient-centered approach to case management (enhanced DOT) have higher rates of treatment completion than less intensive strategies.⁸

Guidance

Although some patients may undergo most of their evaluation and treatment in settings other than a local public health agency, a local public health agency should undertake the major responsibility for monitoring and ensuring the quality of all TB-related activities in the community as part of its duties to protect the public health.⁹

Effective TB case management requires administrative commitment and support. This includes education, staff training, and ensuring adequate funding to maintain program activities. ¹⁰ It is recognized that local public health agencies differ in their staffing and organization and that no set of guidelines can cover all the situations that may arise relating to case management. ¹¹



For roles and responsibilities, refer to the "Roles, Responsibilities, and Contact Information" topic in the Introduction.

Acknowledgments

The authors want to acknowledge the extensive use of two non-Centers for Disease Prevention and Control (CDC) sources for the content in this section.

The New Jersey Medical School National Tuberculosis Center's *Tuberculosis Case Management for Nurses: Self-Study Modules* course is a comprehensive and well-written overview of case management for a national audience. The text for the large portions of the Initial "Assessment," "Treatment Plan," and "Ongoing Assessment and Monitoring" topics was taken and/or adapted from the second module of this self-study course.

The California Department of Health Services (CDHS)/California Tuberculosis Controllers Association (CTCA) "TB Case Management – Core Components" guideline provides another comprehensive source of recommendations on case management practices. This guideline is one in the series of *CDHS/CTCA Joint Guidelines* and is used throughout urban and rural areas in California. Some content in the "Ongoing Assessment and Monitoring" topic used taken from the "TB Case Management – Core Components" guideline.

Initial Assessment

Conduct initial assessments for tuberculosis (TB) patients to gather data that will form the basis for TB treatment and care. It is essential to gather data to determine the clinical and social issues and circumstances of relevance to the patient and to assess each situation objectively to determine the appropriateness of the planned intervention. Many professionals involved in the patient's care contribute to the assessment data, and the case manager gathers assessment data from many sources, including community agencies, primary care providers, schools, and other healthcare facilities.¹²



When the patient with TB is a child, the case manager should involve both the child and family in the assessment process. 13



For the reporting schedule, see Table 3: **Required Reports** in the "Required Reports from Local Public Health Agencies to the State Tuberculosis Program" topic in the State Tuberculosis Program topic in the Surveillance section.

Cultural Sensitivity and Language Issues

In the initial assessment, consider cultural sensitivity and language issues. To improve the validity and quality of the assessment information, healthcare workers need to be culturally sensitive in approaching each patient. A medical interpreter may be needed for patients whose primary language is not English.



For more information on cultural sensitivity, refer to the *Participant's Workbook* for Session 4: "Working with Culturally Diverse Populations," in the Francis J. Curry National Tuberculosis Center's *DOT Essentials: The DOT Trainer's Curriculum*, at

 $\frac{http://www.nationaltbcenter.edu/catalogue/epub/index.cfm?uniqueID=2\&talogue/epub/index.cfm?uniqu$

For assistance with language issues, you may have local resources in place, or see the *Language Services Resource Guide for Health Care Providers* (The National Health Law Program and The National Council on Interpreting Health Care) at

http://www.healthlaw.org/library.cfm?fa=download&resourceID=89928&appView=folder&print.



For more information on using interpreters, see the *Interpretation Services* lesson in Module 9: "Patient Adherence to Tuberculosis Treatment" of the CDC's *Self-Study Modules on Tuberculosis* (1999) at http://www.phppo.cdc.gov/phtn/tbmodules/modules6-9/m9/9-12.htm.

Patient's Medical Records

All medical records are needed to provide case management and recommend a treatment plan. Prior to the visit with the patient, the case manager should ensure that a copy of all of the patient's medical records (from hospitals, clinics, and other healthcare providers) and chest radiographs are available to the treating physician. Without the medical records, the physician may not be able to make the correct judgments in medical management.¹⁴

Assessment Site

If the patient is hospitalized, conduct the initial assessment during the patient's hospitalization. If the patient is not hospitalized, conduct the initial assessment at the first clinic visit or during a home visit.

Discharge Planning



Patients who are diagnosed with TB during a hospitalization will require discharge planning. The case managers should ensure that appropriate discharge planning occurs for all patients with TB to prevent transmission in the community and interruption in treatment.¹⁵

Initial Assessment Activities

To complete an initial assessment, perform the following activities:

- Visit the patient's home
- Obtain or review demographic information
- Ascertain the extent of TB illness
- Obtain and review the patient's health history
- Determine infectiousness or potential infectiousness
- Evaluate the patient's knowledge and beliefs about TB
- Initiate treatment under direction of the case's physician, if not initiated during hospital stay
- Monitor the TB medication regimen

- Identify any barriers or obstacles to adherence
- Review psychosocial status
- Identify and document a good history of the patient's social network
- Gather information for a possible contact investigation

Visit the patient's home. During the patient's TB treatment, at least one or more home visits are required. Home visits are useful for confirming the patient's address, particularly for patients at high risk for default from treatment. Information gathered at the patient's home is often more revealing than assessments performed in the clinical or health department settings and can lead to a more accurate understanding of the patient's lifestyle (for example, seeing a child's shoes or toys when a child was not named in the contact investigation). ¹⁶ Several home visits may be needed because not all of the needed information is usually gathered from the patient and his or her family at one time.

Obtain or review demographic information, including the name, address, telephone number(s), birth date, Social Security number, and health insurance provider's name, address, and identifying information.¹⁷

Ascertain the extent of TB illness, including acuity and length of symptoms, bacteriology and radiographic findings, laboratory analyses, tuberculin skin test results, nutritional status, vital signs, and baseline weight (without shoes and excess clothing). Assess temperature, pulse, and respiration if the patient appears ill or the history suggests illness. Blood pressure evaluations are valuable, especially if the patient has no primary care provider.

The responsible physician and/or program medical consultant should be consulted within 2 business days of receipt of a suspect report. If not recently done, a tuberculin skin test should be placed on the suspected case, measured, interpreted, and documented within 1 week of a case report. In addition, a chest radiograph should be taken and interpreted within 1 week of a case report if not previously done. A minimum of three consecutive sputum specimens of good quality should be collected 8–24 hours apart (with at least one being an early morning specimen) and submitted to the laboratory within 1 week of a case report.



In the case of pulmonary TB in children younger than 5 years of age, anterior/posterior and lateral chest radiographs are important in the initial diagnosis. Adults who are suspected of TB or who are active cases usually need only an initial posterior/anterior chest radiograph.

Obtain and review the patient's health history to determine concurrent medical problems, including human immunodeficiency virus (HIV) disease or risk factors, country of birth, sexual history, allergies, or medications that may interfere with TB drugs. The case manager should obtain the names, addresses, and telephone numbers of the

patient's primary care provider and any specialists involved in his or her medical care, previous hospitalizations, allergies, and current medications. It is important to know the patient's history of treatment for TB infection and/or disease, especially those who are treatment failures or have a relapse of TB disease, as they are at a higher risk for developing multidrug-resistant TB (MDR-TB). It is also important to determine what the patient perceives as his or her most important medical/health problem. The pregnancy status and contraceptive use should be obtained from female patients.¹⁹



Some antituberculosis medications are contraindicated when a patient is taking birth control pills. For more information, see the "Side Effects and Adverse Reactions" topic in the Treatment of Tuberculosis Disease section.

Determine infectiousness or potential infectiousness. To determine where and whom to initiate contact investigation, the initial assessment should gather information to define the start and end dates of the period of infectiousness. This assessment should include the duration and frequency of symptoms, especially cough, and a review of the radiographic findings. If the patient is infectious or potentially infectious, the case manager should have an understanding of the period of infectiousness. The parameters of a contact investigation, including the need for repeating the tuberculin skin test for contacts that were initially negative, can then be determined.²⁰



A source-case investigation seeks the source of recent *Mycobacterium tuberculosis* infection, perhaps newly diagnosed TB disease. TB disease in children younger than 5 years typically indicates that the infection must be recent. The yield of source-case investigations for children who have TB disease varies, typically less than 50% on average. A younger age cut-off might be advisable because the focus would be on more recent transmission.



For more information on the period of infectiousness and contact investigations, see the Contact Investigation section.

Evaluate the patient's knowledge and beliefs about TB, including a history of TB in family and/or friends and the response to treatment. The case manager can assess TB knowledge by interviewing the patient regarding TB transmission, pathogenesis, and symptoms. Patient education should be based on current knowledge and ability to comprehend written, visual, and/or verbal information.²¹



It is important to interview both the child and parent or guardian in their own language when assessing TB knowledge; however, adolescents should be given the opportunity to speak to a healthcare provider alone. Keep in mind that parents who have misinformation or cultural bias about

TB may affect their children's understanding of the disease.²² Use age-appropriate educational materials and methods, especially in working with children. When dealing with a school-aged child, it is important to explain that TB is treatable, and with the adolescent, it may be necessary to constantly reaffirm confidentiality.²³

Initiate treatment. A clinician should initiate medical treatment within 3 days of positive AFB sputum smear results (unless there is evidence that the AFB is not *Mycobacterium tuberculosis* complex, e.g., direct test of sputum) or a presumptive diagnosis. A clinician should complete medical evaluations within 1 week of a referral. The case manager should order drugs immediately upon receipt of medical orders or ensure drugs have been ordered by the clinician, and then should initiate treatment within 1 business day of receiving the drugs. Drug(s), dose, route, frequency, and duration should be documented in the order.

Monitor the TB medication regimen. The case manager should ensure that medications and dosages are prescribed according to current American Thoracic Society (ATS)/Centers for Disease Control and Prevention (CDC) guidelines. If the initial assessment occurs during the patient's hospitalization, the case manager should ensure that the ingestion of the TB medication is observed by a nurse. Since the outpatient phase of treatment will involve giving TB medications at one time, hospitals should be discouraged from splitting dosages for two reasons: (1) taking medications more than once a day creates an expectation for the patient that will have to change after discharge from the hospital, and (2) tolerance to the full dosage cannot be assessed while in hospital. The patient's tolerance to TB medications should be noted, and interactions with other medications should be determined prior to the patient starting TB medications.²⁴



For more information on treatment regimens and dosages, see the Treatment of Tuberculosis Disease section.

Identify any barriers or obstacles to adherence in taking TB medications and keeping physician or clinic appointments. This includes such issues as language, availability of transportation, the patient's preference for place and time of directly observed therapy (DOT), and the ability to swallow pills. Many adolescents and adults who have difficulty swallowing pills are embarrassed to report this to the healthcare provider. It may be necessary to teach people how to take pills, or it may be necessary to crush the pills and put them in food such as pudding or applesauce. In addition, the case manager should determine the need for enablers and identify incentives that will be most valuable to the patient.²⁵

Review psychosocial status to identify unmet needs, the use of alcohol and/or illegal drugs, and any pre-existing psychiatric diagnoses.²⁶

Identify and document a good history of the patient's social network. This is important to identify and document in the event that the patient does not return for follow-up. The case manager needs to verify the patient/family's address, evaluate residential stability, and assess potential for homelessness. Determine the patient's residence(s) during the past year, particularly any congregate living situations such as prison, jail, homeless shelter, nursing home, boarding home, or foster care. Establish the patient's occupation and/or student status, and document the name and address of business or school. The name and location of a child's babysitter, other caretakers, daycare center and/or school should be noted. In order to identify those who have shared common air space with the infectious, untreated patients with TB, it is necessary to have an understanding of the patient's social and recreational activities and how he/she spends leisure time. This includes time spent at bars, floating card games, circuit parties, faith-based functions, and other venues.

Gather information for a possible contact investigation. A contact investigation should begin within 3 business days of a case/suspect report and be completed within 3 months.



For more information, see the Contact Investigation section.

Treatment Plan

When sufficient information has been gathered by members of the healthcare team to assess a patient's needs and problems, the case manager should develop a treatment plan for each patient with confirmed or suspected tuberculosis (TB). The plan should combine both medical management of the patient and nursing interventions. Due to the length of TB treatment (from six to 24 months), the plan must include intermediate and expected outcomes.

To ensure that therapy is completed, a treatment plan should be based on data collected by the healthcare team and must be designed to meet the patient's medical and personal needs. Treatment of patients with TB is most successful within a comprehensive framework that addresses both clinical and social issues of relevance to the patient. Patient-centered care is essential to provide because it tailors treatment and bases supervision on each patient's clinical and social circumstances.

Each patient's management plan should be individualized to incorporate measures that facilitate adherence to the drug regimen, such as social service support, treatment incentives and enablers, housing assistance, referral for treatment of substance abuse, and coordination of TB services with those of other providers.²⁷

In the initial management strategy, regardless of the source of supervision, always include an adherence plan that emphasizes directly observed therapy (DOT), in which patients are observed as they ingest each dose of antituberculosis medications, to maximize the likelihood of completion of therapy.²⁸

The case manager is responsible for the overall plan, including documentation, monitoring the patient response, interventions, intermediate and expected outcomes, and initiating changes in the plan to reflect changes in circumstances.²⁹ The treatment plan should be reviewed and updated monthly during reviews of clinical progress.³⁰



An example of a treatment plan can be found in the Forms chapter.

Treatment Plan Components

Recommended components of a treatment plan include the following:

- Patient's verified address and contact information
- Assignment of responsibilities: case manager, clinical supervisor (nurse, physician, or physician assistant), DOT workers, other caregivers (outreach workers, nurses), and person managing the contact investigation
- Patient educator's name and dates of education sessions
- Method for prevention of transmission: no isolation, airborne infection isolation, home isolation, legal order for isolation
- Planned course of antituberculosis drug therapy
- Estimated date of completion of treatment
- Test results from initial medical evaluation
- Medical history
- Diagnosis
- Monitoring activities and schedule to assess response to therapy
- Baseline tests and monitoring activities and schedule to detect potential side effects and adverse reactions
- Potential drug interactions
- Potential treatment adherence obstacles (e.g., Language barriers, financial or employment concerns)
- Personal service needs
- Referrals for social services
- Means of ensuring successful completion of treatment (DOT, incentives, enablers)
- Location(s) where DOT will be administered
- Approvals and signatures of the attending physician, local public health agency representative, and the patient on the treatment plan form, if form is used
- Intermediate and expected outcomes³¹



For a list of intermediate and expected outcomes, see *Module 2:* "Fundamentals of TB Case Management," pages 23–25 in the New Jersey Medical School National Tuberculosis Center's *Tuberculosis Case Management for Nurses: Self-Study Modules* at http://www.umdnj.edu/globaltb/products/tbcasemgmtmodules.htm.

Planning Activities

To complete planning, perform the following activities:

- Establish the treatment plan
- Establish time frames in the treatment plan to monitor the plan and patient response
- Negotiate and adjust the treatment plan

Establish the treatment plan, ensuring that all the components are included. The case manager should ensure that the treatment plan is useful and meaningful. It becomes the internal standard of care for the patient as well as the performance standard for the case manager. Good planning will allow the patient to experience TB care and treatment along the healthcare continuum and prevent duplication and fragmentation of services. The plan should be discussed and validated with all team members and the patient.³²

DOT should be the standard of care for all TB cases and suspects.

Establish time frames in the treatment plan to monitor the plan and patient response. Monitoring should be done at least monthly at the patient's home, ambulatory clinic, health department, or private physician's office. Each component of the plan should be reviewed to ensure that it is an accurate accounting of the patient's problems, required tests, and interventions. To track progress toward outcomes, document all treatment activities and their dates: medications taken, tests and results, patient visits, monitoring activities, side effects, adverse reactions, education sessions, social service referrals, incentives, enablers, isolation status changes, and patient problems.³³

Negotiate and adjust the treatment plan as needed, to meet new realities. Since patient circumstances are usually fluid and personnel resources often change over time, it is essential that the plan be negotiated with the patient and changed to adjust to new situations. The adjusted plan should be discussed with the team members, as well as the patient.³⁴

Implementation Activities

To begin implementation of the treatment plan, perform the following activities:

- Refer the patient to other healthcare providers, social service agencies, or community organizations as needed with the case manager functioning as a liaison
- Broker and locate needed services relating to TB treatment
- Negotiate a plan for DOT or self-administration evaluation
- Coordinate strategies to improve adherence

Refer the patient to other healthcare providers, social service agencies, or community organizations as needed. The referral process requires the case manager to locate and coordinate accessible available and affordable resources for the patient. After the referral is made, the case manager should monitor the patient's adherence to the referral and obtain the consultation or follow-up report in writing. Immediate intervention may be necessary if the patient or the referring agency experiences difficulty. The patients with suspected and proven TB should be assessed for HIV risk and offered counseling and voluntary testing for HIV with referral for HIV treatment services when necessary. Referrals to medical specialists for conditions that would endanger the patient and/or affect the outcome of treatment should be made as soon as possible. The patient should be sent to an emergency department if the condition is serious when assessed by the case manager. The case manager should follow up a referral to obtain medical information and determine whether the necessary medical intervention has been completed.

Broker and locate needed services relating to the TB treatment. This may include laboratory, auditory, or visual acuity testing; additional radiographs; or other tests required specifically for the patient. It is important to schedule or assist the patient in scheduling appointments and to monitor the patient's adherence to the appointment and the results. An understanding of the patient's financial resources and health insurance coverage is important. Lack of financial resources or health insurance will affect the patient's willingness to keep appointments, which may be critical to his or her health. The case manager may need to discuss essential services with insurance companies or other healthcare providers to obtain the most cost effective, quality service. Assistance should be provided to reinforce a patient's efforts to receive financial assistance and psychosocial, alcohol, and other drug treatment.

Negotiate a plan for DOT or self-administration evaluation. DOT should be the standard of care for all patients. The case manager should ensure the plan is suitable for the patient's needs and achievable by the healthcare provider(s) and then have the patient sign a DOT agreement. Due to the length of TB treatment, the patient's circumstances may change. The case manager needs to verify that the time and place for DOT administration originally agreed upon is still agreeable to the patient and provider. It also may be necessary to coordinate the arrangements for DOT with outside organizations, such as school nurses or drug treatment center nurses.³⁷



Refer to the "Directly Observed Therapy" topic in this section.

Coordinate strategies to improve adherence. The case manager must have knowledge of and proficiency in strategies to improve patient adherence, understand the importance of developing and maintaining a therapeutic relationship, and be familiar with the principles and practices of behavioral contracting and behavioral modification. Collaboration with team members is essential to obtain as much information as possible about strategies to improve adherence of individual patients and elicit opinions, attitudes, and feelings expressed by the patient. To be effective, incentives and enablers should

be meaningful and specific for a particular patient. ³⁸ Incentives and enablers should be considered for use with all patients.

Ongoing Assessment and Monitoring

Conduct ongoing assessments and monitor patients monthly, either in an ambulatory clinic setting, local public health agency, or private physician's office. Schedule additional assessments throughout the month for patients experiencing problems in their tuberculosis (TB) treatment, or for those patients who are nonadherent to directly observed therapy (DOT) or follow-up appointments.³⁹

There are countless stories from nurses and outreach workers reinforcing the fact that not all information is obtained from the patient or family at one time. Therefore, the case manager must ensure that the list of contacts is updated from time to time and determine the need for further testing. It is also important to review the status of the contact investigation to ensure that timelines and standards are followed. Also, checking for the accuracy of previously gathered information should occur throughout the patient's TB treatment.⁴⁰



For examples of ongoing assessment and monitoring forms (not required), see chapter 17 "Forms". For the reporting schedule, see Table 3:

Required Reports in the "Required Reports from Local Public Health Agencies to the State Tuberculosis Program" topic in the State Tuberculosis Program topic in the Surveillance section.

Ongoing Assessment Activities

To complete an ongoing assessment, perform the following activities:

- Monitor the clinical response to treatment
- Determine human immunodeficiency virus (HIV) status and the risk factors for HIV disease, and refer the patient for treatment, if indicated
- Review the treatment regimen
- Ensure that medications are ordered and given at the correct time, and in the correct dosage
- Monitor the side effects of and adverse reactions to medication
- Assess adherence daily and monthly and identify positive and negative motivational factors influencing adherence
- Determine educational needs and educate the patient about the TB disease process
- Advocate for the patient with team members and other service providers
- Review the status of the contact investigation, if one was started
- Assess barriers to care, including ability to pay for services

Monitor the clinical response to treatment by reviewing vital signs, weight, and bacteriology reports, radiographic results, including drug susceptibility results and TB symptoms and comparing them to previous documented findings. During treatment of patients with pulmonary TB, a sputum specimen for microscopic examination and culture should be obtained at a minimum of monthly intervals until two consecutive specimens are negative on culture. More frequent acid-fast bacilli (AFB) smears may be useful to assess the early response to treatment and to provide an indication of infectiousness. For patients with extrapulmonary TB, the frequency and kinds of evaluation will depend on the site involved.

This review is an important measurement of clinical improvement, worsening, or stabilization of the patient's condition. If the patient's condition is worsening, interview the patient to determine the potential cause(s) for the worsening condition. List all bacteriological reports in chronological order and correlate them with the patient's current symptoms history and chest radiograph report to assure accuracy. Also, conduct this review at conversion as evidence for the improving condition of the patient.⁴¹



Inconsistencies should trigger additional questions, such as the possibility of laboratory contamination. Bring these questions to the physician's attention immediately. 42



A child's clinical response to treatment may not be as significant as that of an adult. Therefore, it is important to reinforce what the expected response to treatment should be for the individual child during the course of treatment. ⁴³



Guidance on estimating infectiousness and when a patient is noninfectious are available in the Infection Control section.

Determine HIV status and the risk factors for HIV disease, and refer the patient for treatment, if indicated. It is important for patients to understand the correlation between TB and HIV disease. The case manager should ensure that HIV counseling and testing are done at the beginning of TB treatment, if the HIV status is not previously known. If the patient refuses HIV testing, an assessment of the risk factors for HIV should be completed. If a patient refuses, voluntary HIV testing and counseling should continue to be offered periodically throughout treatment:

If the parents of a young child with TB refuse to permit the child to be HIV tested, the parents should be interviewed regarding the child's risk of HIV disease, including neonatal transmission.⁴⁵

Review the treatment regimen to verify that the physician's orders are clear and concise. One of the case manager's primary responsibilities is to ensure that the patient completes treatment according to the physician's orders. It is also important to ensure

that the plan is specific for the individual patient and follows the principles of TB treatment. 46

Ensure that medications are ordered and given at the correct time, and in the correct dosage. Review the patient's treatment plan and chart and correct the medications as necessary.

Monitor the side effects of and adverse reactions to medication. Review laboratory findings and contact the treating physician if abnormal results are obtained.⁴⁷ The patient should be monitored by a registered nurse and/or clinician or case manager monthly for signs and symptoms of adverse reactions until treatment is completed. If a patient is symptomatic, the provider should be consulted and the patient monitored more frequently. Chemistries and complete blood count (CBC), aspartate aminotransferase (AST)/alanine aminotransferase (ALT), or other tests based on specific drugs should be done periodically per physician's order. See Table 8: **Monitoring and Interventions for Side Effects and Adverse Reactions** in the Treatment of Tuberculosis Disease section.



If a child is taking TB medications at school, communicate at a minimum on a monthly basis with designated staff to determine whether the child is experiencing medication side effects or adverse reactions.⁴⁸

Assess adherence daily and monthly and identify positive and negative motivational factors influencing adherence. An assessment of adherence needs to occur at each patient encounter. If the case manager is not involved in providing the care, a notification system should alert him or her if the patient misses a DOT dose or if there is suspicion of nonadherence in the case of self-administered therapy. If a DOT dose is missed, the patient should be contacted the same day or the next business day. Direct observation provides immediate information on poor adherence and adverse effects. The key to a successful DOT program is the timely use of this data in order to promptly identify and respond to potential barriers to adherence, missed doses, and potential adverse treatment effects. It is important not to send a mixed message to a patient by not promptly responding to missed DOT doses. A preventable interruption in treatment can be avoided if the case manager is notified immediately.. If the patient is self-administering TB medications, make regular (ideally weekly, but at least monthly) contact with the patient to assess adherence and monitor for side effects and adverse reactions. Also, regularly monitor the effectiveness of enhancement methods (i.e., incentives, enablers, behavioral contracting, or behavior modification). The case manager should review the monthly adherence rate to ensure that patients achieve the expected adherence rate. DOT should be initiated if adherence is compromised, as evidenced by missed pill pick-up appointments, inaccurate pill counts, etc., in persons at high risk of developing TB disease.

The case manager should ensure that the patient is informed about the consequences of nonadherence, including legal interventions. Changes in the patient's attitude towards the healthcare worker should be noted and verified with the patient.⁴⁹



For more information, see the "Directly Observed Therapy" and "Legal Orders" topics in this section.

Determine the unmet educational needs of the patient regarding transmission, diagnosis, and treatment of TB. Identify the concerns and anxieties regarding diagnosis, and need for further education. The educational needs of the patient/family may vary throughout the course of treatment. Patient education also will vary depending on beliefs about TB treatment, acceptance of the diagnosis, coping mechanisms, cultural values, and the accuracy of the information they have already received. The case manager should explore the effect the diagnosis has on the patient's relationships with other family members, coworkers, and social contacts so that appropriate, culturally sensitive information can be provided.⁵⁰

Educate the patient about the TB disease process during the course of TB treatment. Provide instruction relevant for the patient's level of education or ability to learn and address healthcare beliefs that are in conflict with educational information. The case manager should ensure that education is provided in the patient's primary language and that it is culturally appropriate. ⁵¹ The case manager should provide patient and family education monthly and until satisfactory recall is obtained.



For more information, see the Patient Education section.

Advocate for the patient with team members and other service providers when necessary. The case manager should demonstrate respect and understanding of the patient's cultural beliefs and values and prevent team members from imposing their own values or belief systems on the patient. The case manager should be able to communicate the patient's fears/anxieties, likes/dislikes, and needs/wants to the team members in a nonjudgmental manner. The case manager must also have an understanding of the team members, and mediate, negotiate, and resolve differences of opinion regarding the patient and interventions.52

Review the status of the contact investigation, if one was initiated. It has been found that patients may not initially reveal the names of all close contacts. Over time, many more individuals are often identified.53 A contact investigation should begin within 3 business days of a case/suspect report and be completed within 3 months. The investigation should be repeated if for any reason the index patient becomes AFB sputum smear positive again during treatment and there has been sufficient exposure for the skin test negative persons to become infected.

Assess barriers to care. Ensure translators are available if the case or family members require assistance. Work with employment or school situations to address absences required for healthcare provider visits or isolation requirements. The case manager should work with insurance providers, charities, government agencies or other sources of financial assistance as needed. The case manager should also interview the client to determine other reasons for interruptions or other difficulties with adherence to the treatment plan.

Monitoring Side Effects and Adverse Reactions

Assess and document side effects and adverse reactions to antituberculosis medications and monitor toxicity. The patient should be monitored by a registered nurse and/or clinician or case manager monthly for signs and symptoms of adverse reactions until treatment is completed. If a patient is symptomatic, the provider should be consulted and the patient monitored more frequently. Chemistries and CBC, AST/ ALT, or other tests based on specific drugs should be done periodically. See Table 8: **Monitoring and Interventions for Side Effects and Adverse Reactions** in the Treatment of Tuberculosis Disease section.

As is true with all medications, combination chemotherapy for tuberculosis is associated with a predictable incidence of adverse effects, some mild, some serious.

Adverse effects are fairly common and often manageable. Although it is important to be attuned to the potential for adverse effects, it is at least equally important that first-line drugs not be stopped without adequate justification. However, adverse reactions can be severe, and thus, it is important to recognize adverse reactions that indicate when a drug should not be used. Mild adverse effects can generally be managed with symptomatic therapy, whereas with more severe effects, the offending drug or drugs must be discontinued. In addition, proper management of more serious adverse reactions often requires expert consultation. All side effects should be reported to the healthcare provider in charge of the patient's care.



Instruct patients to report the side effects and adverse reactions listed in the "Side Effects and Adverse Reactions" topic in the Treatment of Tuberculosis Disease section.



For monitoring patients on treatment for TB disease, the "Monthly TB Patient Assessment," "Directly Observed Therapy Form 1: Treatment Record," and "Directly Observed Therapy Form 2: Side Effects and Adverse Reactions" forms are available at on the "Idaho Tuberculosis Forms" Web page at http://www.dphhs.mt.gov/PHSD/epidemiology/commun-disease-epi-tuberculosis.shtml.

Activities to Monitor for Side Effects and Adverse Reactions

To monitor for side effects and adverse reactions, perform the following activities:

- Educate the patient and family to report side effects and adverse reactions
- Assess the patient for adverse reactions and side effects

Educate the patient and family to report side effects and adverse reactions. The case manager reinforces prior patient teaching and continues to educate the patient and family about TB medications, signs, and symptoms of adverse effects, importance of continued treatment and uninterrupted drug therapy. Case managers should be familiar with all TB medications, their side effects, contraindications and drug interactions.⁵⁷



For more information, see the Patient Education section.

Assess the patient for adverse reactions and side effects. For patients on self-administered therapy, the case manager ensures that patients are assessed for adverse effects to TB medications at least monthly and at each visit. If the patient is on DOT or pill counts, staff should assess patients for side effects and adverse reactions on each visit by performing a symptom review. If indicated, order liver function tests and monitor their results. The case manager should be aware of complications in patients on medications by maintaining close communication with outreach staff.⁵⁸

Monitoring Bacteriologic and Clinical Improvement

During treatment of patients with pulmonary TB, a sputum specimen for microscopic examination and culture should be obtained at a minimum of monthly intervals until two consecutive specimens are negative on culture. More frequent AFB smears may be useful to assess the early response to treatment and to provide an indication of infectiousness. For patients with extrapulmonary TB, the frequency and kinds of evaluation will depend on the site involved.



For examples of tools that can be used to monitor patients on treatment for TB disease see chapter 17 "Forms".

Activities to Monitor for Bacteriologic and Clinical Improvement

To monitor for response to treatment, perform the activities described below.

Pulmonary TB: Collect follow-up Sputa for AFB Smear and Culture

If a patient is AFB sputum smear negative, place laboratory reports promptly in the patient's chart. If previously AFB sputum smear positive and now AFB sputum smear negative on three separate consecutive days, consider discontinuing isolation.⁵⁹

If a patient is AFB sputum smear positive and

- Prior positive: Place a report in the patient's chart. Repeat sputa smears every
 week until there are three consecutive AFB-negative smear results of sputum
 specimens collected eight to 24 hours apart (with at least one being an early morning
 specimen). Place all results in the patient's chart.
- Has new AFB sputum smear positive results and is diagnosed with pulmonary TB: Notify the state TB controller and healthcare provider and initiate isolation. Repeat sputa smears every week until there are three consecutive AFB-negative smear results of sputum specimens collected eight to 24 hours apart (with at least one being an early morning specimen). Discuss with the provider whether to collect at least one sputum for culture and sensitivity to ensure that drug resistance has not developed. If the patient is not on DOT, discuss placing the patient on DOT to ensure compliance. Place all results in the patient's chart.⁶⁰

Continued Positive Sputum Smears or Positive Cultures



If sputa smears are positive after two months, seek expert consultation or call the Idaho State TB program at 208-334-5939.

A patient with continued AFB sputum smear positive results or positive cultures should be evaluated for treatment failure if sputa specimen(s) remain bacteriologically positive (i.e., culture positive and/or AFB sputum smear positive) after three months of treatment or become bacteriologically positive after initially converting to negative.

The case manager should initiate the evaluation of the patient and notify the healthcare provider for the patient within 1 business day. The case manager also should do the following:

- 1. Review and confirm the patient's medication compliance
- 2. Place the patient on DOT, if not already on DOT
- **3.** Reconfirm the appropriateness of the medication regimen, based on drug susceptibility results and other considerations
- **4.** Work with the provider to ensure that If they use additional antituberculosis drugs, at least two new drugs that the patient has not been treated with previously are used
- 5. Consider serum drug levels
- Repeat cultures and repeat drug susceptibility testing⁶¹

Culture Negative or No Specimens

If a patient is culture negative or no specimens were collected:

- **1.** Review the medications that the patient was on at the time TB medications were started, particularly other antibiotics.
- 2. If applicable, obtain follow-up chest radiograph reports to determine improvement.
- 3. Review the patient's symptoms for improvement, if applicable.
- **4.** Review the patient's tuberculin skin testing information (retesting may be appropriate if initially negative or test if not initially done) and discuss this with the patient's provider.
- **5.** Review information with the provider regarding his or her reasons for continuing TB medications.
- **6.** Discuss the above findings with the Idaho State TB program at 208-334-5939 to determine if the patient is to be reported as a case.



Verification of Isolate Drug Susceptibility Results

The case manager should obtain and promptly document all positive cultures and respective drug susceptibility results.

- **1.** If a patient's TB organism is pan-susceptible: follow the recommended treatment regimen.
- 2. If a patient's TB organism is drug resistant: the Idaho State TB Program and district epidemiologist or case manager ill discuss the situation as soon as possible to develop a strategy on how to determine the best treatment course, which may include contacting the healthcare provider, contacting one of the national TB centers, contacting CDC, etc. If the confirming laboratory is out of state, the local health jurisdiction may be notified by the out-of-state laboratory, and the local health jurisdiction will then contact the Idaho State TB Program with the drug susceptibility results
- 3. If isoniazid-resistant or multidrug-resistant TB (MDR-TB): Place contacts on appropriate latent TB infection (LTBI) treatment regimens. Treatment of LTBI caused by drug-resistant organisms should be provided by, or in close consultation with, an expert in the management of these difficult situations. For patients with MDR-TB, refer to the instructions on Multidrug-Resistant Tuberculosis provided below.

Multidrug-Resistant Tuberculosis

If a patient has MDR-TB, the case manager immediately should:

- 1. Notify his or her supervisor, and
- 2. Notify the Idaho State TB Program at 208-334-5939



Completion of Therapy

The case manager should verify completion of therapy. Completion of therapy is essential to ensure that the patient is cured. It is also a Centers for Disease Control and Prevention (CDC) goal and important measurement of the effectiveness of tuberculosis (TB) control efforts. Verification of completion of therapy and a completed contact investigation are the responsibility of the case manager.



To record verification and closure information, use the Report of a Verified Case of Tuberculosis Follow up 2 (RVCT FU-2) form.

Verifying Adequate Course of Treatment

Most cases of active TB can be successfully treated using standard short course (six months) of therapy. The case manager is responsible for working with the provider to consider the following conditions to ensure that the patient has received an adequate course of therapy.

- If culture remains positive beyond two months of treatment, reasons for persistent positive cultures should be examined and treatment adjusted/prolonged.
- For TB involving the bones or joints or tuberculous meningitis: These are exceptions to the standard six-month course. See "Duration of Treatment" in the "Treatment Regimens and Dosages" topic in the Treatment of Tuberculosis Disease section.
- HIV-negative, culture-negative patients: See the Treatment of Tuberculosis
 Disease section. See "Duration of Treatment" in the "Treatment Regimens and
 Dosages" topic in the Treatment of Tuberculosis Disease section.
- Relapse of TB following treatment for TB with pan-susceptible organisms.
 Treatment may be prolonged to nine months or more. (Current drug susceptibility testing must be performed and the regimen adjusted if resistance has developed.)⁶²

Calculating Completion of Therapy

So that doses missed due to nonadherence or other treatment interruptions are still given after treatment is resumed, the 2003 revised TB treatment guidelines "Treatment of Tuberculosis" (*MMWR* 2003;52[No. RR-11]) at http://www.cdc.gov/mmwr/PDF/rr/rr5211.pdf refer to basing the completion of treatment

on receiving the number of doses of directly observed therapy (DOT) received rather

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For the total number of doses recommended for completion of regimens using first-line drugs, refer to the "Treatment Regimens and Dosages" topic in the Treatment of Tuberculosis Disease section.

Closures Other than Completion of Therapy

than on the chronological passage of time (e.g., six months). 63

• Moved: All attempts should be made by the case manager to obtain the new or forwarding address. If this new address is within the original jurisdiction, the case should be transferred as per the local public health agency protocol. If the new address is in another jurisdiction, the new jurisdiction should be notified using the procedures described in the Transfer Notifications section. Cases should only be closed as "moved" if a new address is obtained.



For information whom to alert when a case will move or has moved, refer to the Transfer Notifications section.

- Not TB: If the completed diagnostic evaluation determined that the diagnosis of TB
 is not substantiated and another diagnosis is established, the case is closed as "Not
 TB."
- **Died:** If the patient expired prior to completion of therapy, whether or not the death was attributed to the patient's TB disease, the case is closed as "Died." The local health jurisdiction should provide the date of death on the completion of therapy report and send the form to the Idaho State TB Program.



Ensure that the contact investigation on the case is also completed. For more information, see the Contact Investigation section.

Evaluation

Evaluate case management activities. Patient care is never complete without the evaluation component. In tuberculosis (TB) case management, the achievement of desired outcomes must be evaluated so that services and activities can be improved and TB treatment goals achieved. Evaluation is the outcome of the case management process and should be continuous and ongoing.

Evaluation activities answer the following questions:

- Were the TB treatment plan and control activities implemented in a timely manner?
- Were intermediate and expected outcomes achieved?
- Was the patient satisfied with services or care?
- Were the case manager and the team members satisfied with the plan and outcomes?

To evaluate case management, perform the following activities:

- Monitor monthly in patient record
- Monitor reports and the contact investigation

Monitor the treatment plan at least monthly, or more frequently, depending on the complexity of treatment and patient variables. Review the appropriateness of interventions, as well as dates when intermediate and/or expected outcomes were achieved. Pay attention to how rapidly the treatment plan was changed when the need was identified. If the treatment plan has remained unchanged despite need for change, determine the reason why.⁶⁵

Monitor reports and the contact investigation to ensure that the TB case reports are accurate and updated according to state standards and that the contact investigation is complete. ⁶⁶

Directly Observed Therapy

Provide directly observed therapy (DOT) as required. DOT means that a healthcare worker or other designated individual trained by the local health jurisdiction watches the patient swallow every dose of the prescribed TB drugs ("supervised swallowing"). A family member should not be designated to observe therapy. A dose of medication that is delivered to a patient, an address, or a mailbox or left with a family member, friend, or acquaintance is a dose of self-administered therapy (SAT) and should be designated as such.

DOT is a component of case management that helps to ensure that patients receive effective treatment and adhere to it. The American Thoracic Society (ATS) and the Centers for Disease Control and Prevention (CDC) recommend that every tuberculosis (TB) patient be considered for DOT.⁶⁷ DOT is implemented because

- DOT is the most effective strategy for making sure that patients take their medicines;
- DOT can lead to reductions in relapse and acquired drug resistance;⁶⁸
- The use of direct observation of each dose provides immediate information on poor adherence and adverse effects, information that cannot readily be obtained from patients treated with SAT.

Candidates for Directly Observed Therapy

DOT should be the standard of care for all TB cases and suspects. In many public health agencies, DOT is the standard of care. That is, it is their goal to place all patients on DOT regardless of the patient's circumstances because it has been shown to be such an important treatment tool. ⁶⁹ The following patients should be priority for receiving medications by DOT:

- Patients on intermittent regimens
- Pediatric patients with tuberculosis (TB) disease
- Patients with multidrug-resistant TB (MDR-TB)
- Persons with human immunodeficiency virus (HIV) coinfection and on treatment for latent TB infection (LTBI)
- Immunocompromised persons on treatment for LTBI
- Pediatric contacts on treatment for LTBI
- Household contacts on treatment for LTBI

How to Deliver Directly Observed Therapy

Who Can Deliver Directly Observed Therapy?

- Usually TB clinic personnel, such as a nurse or other healthcare worker
- Staff at other healthcare settings, such as outpatient treatment centers
- Other responsible persons, such as school personnel, employers, others trained by the local health jurisdiction (Always check with local policies and Board of Pharmacy rules when using non-medical persons)
- Not family members⁷⁰

Principles of Directly Observed Therapy

- The healthcare worker should watch the patient swallow each dose of medication.
- Use DOT with other measures to promote adherence.
- DOT can be given anywhere the patient and healthcare worker agree upon, provided the time and location are convenient and safe. ^{71,72}
- Note that Idaho is currently exploring the use of videophones for DOT as is done in some other states (e.g. Washington State)

Directly Observed Therapy Tasks

- 1. Deliver medication.
- 2. Check for side effects and adverse reactions.



For more information, see the "Ongoing Assessment and Monitoring" topic in this section and the "Side Effects and Adverse Reactions" topic in the Treatment of Tuberculosis Disease section.

- 3. Verify medication.
- 4. Watch the patient take pills.



Healthcare workers should watch for tricks or techniques some patients may use to avoid swallowing medication, such as hiding pills in the mouth and spitting them out later, hiding medicine in clothing, or vomiting the pills after leaving the clinic.

If it is necessary to make sure that the patient swallows the pills, the healthcare worker may have to check the patient's mouth, or ask the patient to wait for a half hour before leaving the clinic so the medication can dissolve in the patient's stomach.⁷³

- 5. Document the visit.
- 6. As necessary and appropriate
 - a. provide patient education;
 - **b.** help the patient keep appointments;
 - **c.** connect the patient with social services and transportation;
 - **d.** draw upon familiarity with the patient's home environment to identify household contacts;
 - e. offer incentives and/or enablers to encourage adherence.⁷⁴



For more information, refer to the Patient Education section and the "Incentives and Enablers" topic in this section.

Adherence to Directly Observed Therapy

Patient Education

The case manager should ensure that education is provided in the patient's primary language and is culturally appropriate. ⁷⁵



For more information, see the Patient Education section. For points to use to explain to the patient why DOT is important, refer to the CDC's *Questions and Answers About TB 2005. Active TB Disease: What is directly observed therapy?* (2005) at http://www.cdc.gov/nchstp/tb/fags/ga TBDisease.htm#Active5.

Children with TB

To facilitate DOT adherence of children with TB, the case manager needs to be familiar with the childhood developmental stages, including important events, and utilize strategies in consideration of these stages.



For more information on adherence strategies for different developmental stages, see Appendix C in the New Jersey Medical School National Tuberculosis Center's *Management of Latent Tuberculosis Infection in Children and Adolescents: A Guide for the Primary Care Provider* (2004) at http://www.umdnj.edu/globaltb/downloads/products/PediatricGuidelines.pdf

Agreements

It may be useful to develop a letter of agreement or acknowledgment between the patient and the DOT worker providing DOT services. Some jurisdictions have successfully used these as a method of ensuring adherence to therapy. The DOT worker and the patient negotiate dates, places, and times for DOT services to be provided and both sign a document stating such agreements. Included in the agreement could be language specifying what consequences may result in the event that the client violates the terms of the contract. ⁷⁶

Incentives and Enablers

Incentives and enablers may be appropriate to help patients adhere to DOT.



For more information, see the "Incentives and Enablers" topic in this section.

Missed Directly Observed Therapy Dose

If a DOT dose is missed, the patient should be contacted on the same day or on the next business day

It is important not to send a mixed message to patients by delaying the response to missed DOT doses. After telling patients that TB treatment is so important for their health and that of the community, one cannot delay in responding to the failure to be available for DOT.

A missed dose needs to be seen as an opportunity to identify barriers to adherence and work with patients to find ways to successfully complete treatment. The key to a successful DOT program is the use of immediate information on poor adherence, side effects, and adverse reactions in order to promptly identify and respond to potential barriers to adherence, missed doses, and potential adverse treatment effects. This approach has been referred to as enhanced DOT—the use of a patient-centered approach to promptly identify and address barriers to treatment completion through use of incentives, enablers, and education efforts appropriate to the individual patient.

Incentives and Enablers

Use incentives and enablers to enhance adherence to therapy.⁷⁷ Incentives and enablers are used to improve patient attitudes and to foster good health behaviors.⁷⁸ They help patients stay with and complete treatment.⁷⁹

Incentives are small rewards given to patients to encourage them to either take their own medicines or keep their clinic or field directly observed therapy (DOT) appointments. ⁸⁰ **Enablers** are those things that make it possible or easier for the patients to receive treatment by overcoming barriers such as transportation difficulties. ⁸¹

Use of incentives and/or enablers should be considered for all cases of tuberculosis (TB) as an adherence-improving measure. The local TB case manager should determine the most appropriate incentive and/or enabler on a case-by-case basis. Payment for incentives and enablers is available on a limited basis through Health District TB contract funding from the Idaho State TB Program. Contact the State TB Program for availability of other funds under extraordinary circumstances, if amounts of financial support are anticipated for a case that may tax the contract amount.

Some **examples** of incentives and enablers used previously are listed below.

TABLE 1: EXAMPLES OF INCENTIVES AND ENABLERS

Incentives	Enablers
 Food and beverages Clothing Automotive supplies Hobby/craft items Household items Laundry services Seasonal/holiday treats Movie passes Restaurant/fast food vouchers Toys Personal care items 	 Transportation Bus pass Cab fare Battery for patient's car Gas Fee for driver's license Childcare Obtaining and transporting specimens for the patient Assisting the client to get medication refills Rent assistance Assisting the client to complete paperwork to get food/housing assistance Assisting the client to get substance treatment

Legal Orders



For Idaho laws, refer to http://adm.idaho.gov/adminrules/rules/idapa16/0210.pdf.

Criteria for starting isolation and discontinuing isolation will be provided in the Infection Control section of this manual.

Understand when and how to use legal orders if necessary for adherence to therapy. Nonadherent adults with pulmonary tuberculosis (TB) pose the greatest threat to the health of a community. It is the local public health agency's responsibility to ensure that compliance is maintained, treatment is completed, and the risk of transmission to others is eliminated. These responsibilities require that TB staff members be innovative and always "go the extra mile" to see that patients take their medicine as prescribed. The public health mandate and good judgment dictate that program staff should go to every extent possible to fulfill the job responsibilities outlined above before resorting to legal action. ⁸²

Have an intervention plan that goes step-by-step from voluntary participation to involuntary confinement as a last resort. Figure 1: *Example of Progressive Interventions for Nonadherent Patients* provides an example from CDC of how the process may go, but not all steps in the Figure may be feasible in Idaho since we must work within the constraints of our legal system and authority. Progressive intervention should begin with learning the possible reasons for nonadherence and addressing the identified problems using methods such as directly observed therapy (DOT), incentives, and enablers. The patient should be told orally and in writing of the importance of adhering to treatment, the consequences of failing to do so, and the legal actions that will have to be taken if the patient refuses to take medication. 83

Before legal measures are taken against a patient who has been taking TB drugs on a self-administered basis, DOT should be offered to the patient.⁸⁴

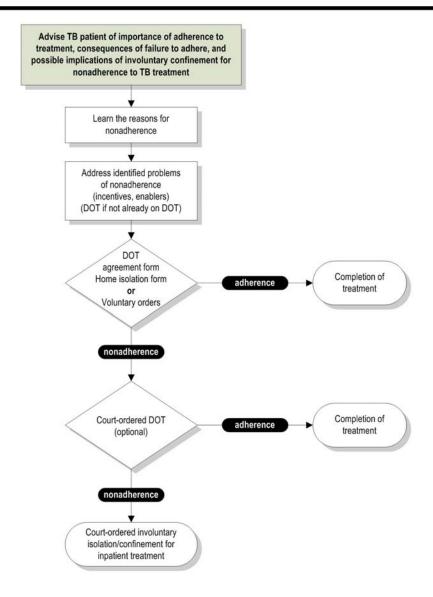
Consider a DOT agreement form and home isolation form with a patient who is likely to comply with treatment requirements. With a patient who may need more encouragement to adhere to treatment, consider using a voluntary orders form. Voluntary orders are not legal orders but serve to clarify the mutual understanding between the patient and the local public health agency and provide written proof that treatment requirements were communicated to the patient and that the patient agreed to them.

If the patient does not adhere to DOT voluntarily, the next step may be court-ordered isolation.⁸⁵

Under normal circumstances, patients with extrapulmonary TB do not transmit the disease to others, and, therefore, these persons usually cannot be put under an isolation order. However, their personal health is endangered if they choose not to be treated.

They should be educated regarding the possibility of their disease spreading to the lungs and becoming infectious to others.⁸⁶

FIGURE 1: EXAMPLE OF PROGRESSIVE INTERVENTIONS FOR NONADHERENT PATIENTS 87



Definition of acronyms: DOT = directly observed therapy. Note not all these may be feasible for Idaho cases. Source: CDC. Module 9: Patient Adherence to Tuberculosis Treatment. Self-Study Modules on Tuberculosis. 1999:28.

Resources and References

(For easy access to references, hyperlinks are provided for online references in the list below.)

General Case Management Resources

- CDC. Module 4: "Treatment of Tuberculosis Infection and Disease" (Self-Study Modules on Tuberculosis 1999) at http://www.phppo.cdc.gov/phtn/tbmodules/modules1-5/m4/4-toc.htm
- CDC. Module 9: "Patient Adherence to Tuberculosis Treatment "(Self-Study Modules on Tuberculosis 1999) at http://www.phppo.cdc.gov/phtn/tbmodules/modules6-9/m9/9-toc.htm
- California Department of Health Services (CDHS)/California Tuberculosis Controllers Association (CTCA). "TB Case Management - Core Components" (CDHS/CTCA Joint Guidelines May 11, 1998) at http://www.ctca.org/publications/guidelines/guidelines04/IIA6casemgmt.pdf
- New Jersey Medical School National Tuberculosis Center. Tuberculosis Case Management for Nurses: Self Study Modules at http://www.umdnj.edu/globaltb/products/tbcasemgmtmodules.htm

Directly Observed Therapy Resources

- CDC. Chapter 7 "Treatment of TB Disease" (Core Curriculum on Tuberculosis [2000] November 2001) at http://www.cdc.gov/TB/pubs/corecurr/Chapter7/Tableofcontents.htm
- CDC. Module 9: "Patient Adherence to Tuberculosis Treatment "(Self-Study Modules on Tuberculosis 1999) at http://www.phppo.cdc.gov/phtn/tbmodules/modules6-9/m9/9-toc.htm
- Francis J. Curry National Tuberculosis Center. Directly Observed Therapy (DOT)
 Training Curriculum for TB Control Programs at
 http://www.nationaltbcenter.edu/catalogue/epub/index.cfm?uniqueID=1&tableName=
 DOTE

Incentives and Enablers Resources

- CDC. "Adherence" in Chapter 7 "Treatment of TB Disease" (Core Curriculum on Tuberculosis [2000] November 2001) at http://www.cdc.gov/tb/pubs/corecurr/Chapter-7_Adherence.htm
- CDC. Module 9: "Patient Adherence to Tuberculosis Treatment "(Self-Study Modules on Tuberculosis 1999) at http://www.phppo.cdc.gov/phtn/tbmodules/modules6-9/m9/9-toc.htm

Legal Orders Resources

- CDC. Module 9: "Patient Adherence to Tuberculosis Treatment "(Self-Study Modules on Tuberculosis 1999) at http://www.phppo.cdc.gov/phtn/tbmodules/modules6-9/m9/9-toc.htm
- New Jersey Medical School National Tuberculosis Center. Implementing Legal Interventions for the Control of Tuberculosis (2005) at http://www.umdnj.edu/qlobaltb/products/legalinterventions.htm
- State of Washington. Tuberculosis Guidelines at http://www.doh.wa.gov/cfh/TB/guidelines.htm

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¹ ATS, CDC, IDSA. Controlling tuberculosis in the United States: Recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. *MMWR* 2005;54(No RR-12):32.

² CDC. Module 9: Patient adherence to tuberculosis treatment. Self-Study Modules on Tuberculosis 1999:3.

³ ATS, CDC, IDSA. Controlling tuberculosis in the United States: Recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. MMWR 2005;54(No RR-12):14.

⁴ ATS, CDC, IDSA. Controlling tuberculosis in the United States: Recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. MMWR 2005;54(No RR-12):17.

⁵ ATS, CDC, IDSA. Controlling tuberculosis in the United States: Recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. *MMWR* 2005;54(No RR-12):17.

⁶ ATS, CDC, IDSA. Treatment of tuberculosis. *MMWR* 2003;52(No. RR-11):1.

⁷ ATS, CDC, IDSA. Treatment of tuberculosis. MMWR 2003;52(No. RR-11):1–2.

⁸ ATS, CDC, IDSA. Treatment of tuberculosis. MMWR 2003;52(No. RR-11):1–2.

⁹ California Department of Health Services (CDHS)/California Tuberculosis Controllers Association (CTCA). TB Case Management – Core Components. CDHS/CTCA Joint Guidelines 1998:1. Accessed July 11, 2006.

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¹³ New Jersey Medical School National Tuberculosis Center. Module 2: Fundamentals of TB case management. Tuberculosis Case Management for Nurses: Self-Study Modules (no year):8. Accessed July 11, 2006.

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17 New Jersey Medical School National Tuberculosis Center. Module 2: Fundamentals of TB case management.

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