Health Canada Santé Canada

Your health and safety… our priority. *Votre santé et votre sécurité… notre priorité.*

DIRECTLY OBSERVED THERAPY MANUAL

FIRST NATIONS AND INUIT HEALTH – ONTARIO REGION

ACKNOWLEDGMENTS

FNIH - Alberta Region DOT Manual

RESOURCES

Canadian Tuberculosis Standards – 6th Edition

FNIH - Alberta Region DOT Manual

Lung Association of Canada

Table of Contents

Chapter 1: Introduction

Welcome to the Tuberculosis program. Whether you are a Directly Observed Therapy Worker, Community Health Representative, or Community Health Nurse you will be a vital member of your community's TB team. Together the team can provide the best possible standard of TB care for your clients.

This manual is intended to provide guidance to all staff involved with delivering TB medications by Directly Observed Therapy (DOT), or Directly Observed Preventative Therapy (DOPT).

The manual:

- defines the roles and responsibilities of the various DOT/DOPT partners
- provides a tool for the education of all team members about the delivery of TB medication by Directly Observed Therapy
- outlines the required process for a registered nurse to assign the task of DOT delivery to another member of the TB team

Directly Observed Therapy is the World Health Organization standard for treatment of tuberculosis disease; First Nations and Inuit Health – Ontario Region has adopted it as the standard for delivery of all TB medications whether they are for treatment of TB disease or latent TB infection.

1.1 TB Program Partners

A number of partners are responsible for the delivery of the TB program in on-reserve communities. These partners include the local community health team (CHR, Health Director, and CHN), the First Nations and Inuit Health regional TB program, the Zone CD nurse, family physicians, local lab and x-ray facilities and the provincial public health unit. These partners work together to implement the TB program elements of case finding, case management, contact tracing, surveillance, screening and education.

1.2 What is Directly Observed Therapy?

Clients not taking TB medications as prescribed is the most common cause of treatment failure and can lead to drug resistance (Canadian Tuberculosis Standards, 6th Edition). The most effective way to prevent this is through Directly Observed Therapy (DOT). Therefore, DOT is the FNIH standard for providing medication to all clients taking TB medications for both the treatment of disease and latent TB infection (prevention), called DOPT.

DOT is a method of delivering TB medication in which a trained DOT worker watches the client swallow each dose of the medication. Each dose, any side effects and any subsequent follow up actions are documented. Support and education around TB and medication are provided to the client.

Chapter 2: Training of DOT Workers

2.1: Education and Training of DOT Workers

This manual outlines the information that all members of the Directly Observed Therapy team need to confidently and competently provide Directly Observed Therapy. A DOT worker could be a CHR or a community member hired specifically for this task. Both require special DOT training. DOT may also be provided by a community health nurse. The community health nurse is responsible for ensuring that the person providing DOT is familiar with the principles of managing and conducting DOT.

Regulatory Context

The College of Nurses of Ontario (CNO) Practice Guideline "Working with Unregulated Care Providers" states that procedures that do not fall within the 13 controlled acts do not require authorization. The CNO states that unregulated care providers still require to be deemed competent for the task by the Community Health Nurse. Further information regarding the practice guideline is available at www.cno.org.

Basic Training Requirements and Process

The Community Health Nurse responsible for the TB program in the community, referred to as the supervising nurse in this manual, carries out the education for and assignment of the specific tasks of DOT. The supervising nurse is responsible for determining when the person identified as the DOT worker is ready to be assigned the task based on their knowledge and skill competency and whether they maintain the competency for continued assignment. The DOT worker is in turn responsible to feel confident and competent in accepting and being accountable for the assignment. Prior to being assigned the task of administering TB medications by Directly Observed Therapy, the DOT worker must have completed orientation and education with the supervising nurse, CD nurse, TB nurse or TB coordinator. This education should include:

- basic information about tuberculosis
- information on managing and conducting DOT
- information about the medications for TB and their administration

The ***DOT Skills Assignment Checklist*** (see Section 7.1) further outlines the process of education and the assignment of tasks. The completed list signifies that the worker has acquired the competencies and may be assigned the tasks of a DOT worker. The DOT worker and the supervising nurse initial each education point when completed and each practical skill when the skill is successfully demonstrated. When the entire list is successfully completed the DOT worker and supervising nurse date and sign the form. A copy of the completed form is forwarded to the Regional TB Coordinator.

After this is complete the DOT worker is ready to begin to deliver TB medications to his/her clients. A certificate of completion will be sent to the new DOT worker from the regional TB coordinator. The resources required for education are included in this manual.

History

Working with TB requires an understanding of the history of TB in First Nation communities. The TB germ was first introduced to First Nations in Canada by European settlers. Since this type of germ was new to First Nations people they had little immunity to it. A devastating outbreak of TB occurred among First Nations in the early 1900's fuelled by this lack of immunity, crowded living conditions and poor nutrition on reserves. Death rates reached 700 per 100,000. TB treatment in this era consisted mainly of isolation of those with the disease into special TB hospitals called *sanatoria*. To prevent further spread of the disease, TB patients were taken from their homes and communities to the sanatoria where they spent months or years. Culture and language were often lost by those removed from their communities, especially children. TB patients sometimes died in hospital and word of the death was never received by family back home. The discovery of antibiotics in the 1940's and 1950's made TB curable and preventable and the death rates decreased quickly.

Disease rates among Ontario First Nations have continued to slowly decline in the decades since TB medications were developed. The rates however remain disproportionately high compared to the general population of Canada. These higher rates are due to crowded living conditions and high rates of TB infection in those who lived throughout the epidemic. This history leaves many First Nations people with sad memories and feelings about TB. It is understandable that those who remember this time will have negative feelings about tuberculosis. It is important to let communities know that TB is now curable and preventable. Directly Observed Therapy is a powerful tool which helps to successfully treat and prevent TB.

2.2 Pre and Post Test *(open book)*

Answers provided in Appendix

1. What is tuberculosis?

2. Describe how TB is spread.

3. What test is performed to see if someone has been infected with the TB germ?

4. What does DOT mean?

5. What medication is offered to people who have TB infection?

6. How long must medication for TB infection be taken?

7. List three signs and symptoms of TB disease.

8. Explain the difference between TB infection and TB disease.

9. List two groups of people who are at greater risk of getting TB disease.

10. Name four medications commonly used to treat TB disease.

11. What can happen if TB medication is stopped too early or taken irregularly?

12. List five side effects of TB medications.

13. List the two special warnings about Rifampin that clients who are taking this medication need to know.

14. What part of the body can be damaged by drinking alcohol while taking TB medication?

15. List two barriers that a client may experience that may keep him/her from taking his/her medication regularly.

16. List five incentives/enablers that could be used to help a client complete his/her treatment.

17. List three reasons documentation is a vital part of client care.

18. Under what circumstances would it be appropriate to leave medication with a client?

19. Whose role is it to prepare the individual doses of client medications?

20. How often should the DOT worker and nurse review clients' progress?

21. The Chief has asked you who is on your client list. What do you do?

2.3 The Role of the CHR in TB Programs

- Providing information and education to individual community members and their families about TB and about tests required for TB screening and follow up
- TB education (for example: delivering TB presentations at schools or community groups)
- Finding clients who require TB follow up (for example, sputum tests, x-rays and screening)
- Collecting informed consent for screening
- Stabilizing the child's arm when being given the TB skin test (as required)
- Providing comfort to the child and parent during TB skin test administration
- Documenting all client contacts (if requested)
- Providing TB medications through DOT when task is assigned by the supervising CHN

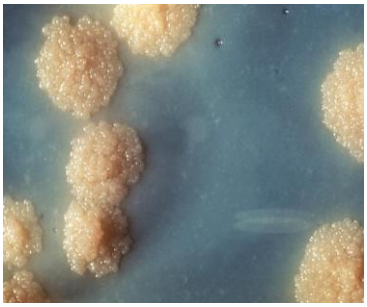
Strong TB programs include early detection and treatment of both TB disease & infection and the promotion of TB awareness in communities.
Strong TB programs can prevent future generations from having TB.

2.4 Understanding Tuberculosis

Characteristics of TB Bacteria

- Require oxygen to survive
- Have a slow replication or growth rate
- Are covered in a thick fatty layer - membrane

- Look like thin, slightly curved rods under the microscope
- Can survive in the air for several hours depending on the environment
- Are not filtered by simple gauze masks or stopped when a patient covers his or her mouth and nose when coughing



The thick membrane and slow growth make the bacteria difficult to kill.

TB Transmission

TB is spread ("transmitted") through the air. When someone with TB disease in their lungs or voice box coughs, laughs, or sings, tiny droplets containing the tuberculosis germ may be released into the air. If another person breathes in these droplets, TB may be spread. People that breathe in the droplets may:

1. Never become infected with TB
2. Become infected but never develop TB disease OR
3. Become infected and develop TB disease weeks (not days), months, or years after exposure

It is important to understand the differences between TB Infection and TB Disease

TB Infection

Most often when we hear the word "infection" we think of being sick with something like a throat or chest infection. We feel sick and are said to have "bronchitis" or "strep throat." The language for TB is different. TB is a slow growing germ. Most people who breathe the TB germ into their lungs have immune systems that are strong enough to wall the germs off, put them to sleep, and stop them from growing. The germ is in the lung but is not doing any damage. **TB infection** means that there are TB germs asleep in the body. People with **TB infection** *are not sick, do not have symptoms* and *can not spread TB to others*. Another name for **TB infection** is "latent TB infection" or "LTBI."

A person with latent TB infection	A person with active TB disease
• Has the tuberculosis **germ** (bacteria) in the body, but the **TB germs** are sleeping or inactive • Does not feel sick • Is not contagious • Has the potential to develop disease if the tuberculosis **germ** (bacteria) become active and multiply in the body • Is treatable – so progression to TB disease **can be prevented** • **Treatment is optional**	• Has the active tuberculosis **germ** (bacteria) in the body • Feels sick and experiences symptoms such as coughing, fever and weight loss • Is capable of spreading the disease to others if the **germs** (bacteria) are active in the lungs or throat • Is curable if diagnosed accurately and early, with prompt initiation and completion of appropriate treatment • Treatment is mandatory

Risk factors for being infected with TB

- Being in close contact with a person who has contagious ***TB disease***
- Exposure to infectious cases of TB (for example, health care workers)
- Being born in or travelling to countries where TB is common
- Living in communities with high rates of ***TB disease*** (past and present)
- Being homeless in an urban centre
- Living in overcrowded and poor living conditions
- Having lived in a time period when TB was more prevalent and cure was not available (for example, some First Nation elders)

The progression of TB infection to TB disease

TB infection may progress to ***TB disease*** if the immune system cannot keep the bacteria asleep. ***TB disease*** means that the TB germs are awake and causing harm to the body.

The period of greatest risk for developing ***TB disease*** from **TB infection** is during the two years after being infected (5%). The risk for the rest of the lifetime is another 5%. This means that out of 100 people infected with the TB germ, five will get disease in the first two years and five more will develop disease at some time in their lifetime. The other 90 people will never develop ***TB disease***.

Since approximately half of the risk of developing *TB disease* is in the first two years after infection, it is important to detect new infection early and offer treatment when appropriate.

Risk Factors for Progressing to TB Disease

- Being in close contact with a person who has contagious ***TB disease***
- Being very young or very old
- Having conditions that weaken the body's ability to fight disease (for example, poorly controlled diabetes, HIV/AIDS, kidney disease, alcoholism, IV drug use, poor nutrition, some types of cancer)
- Taking drugs that affect the body's ability to fight disease (for example, steroids, some arthritis medications)

Treatment of TB Infection

Treatment of **TB infection** is also called *prophylaxis* or *preventative therapy*. Treating **TB infection** with medication kills the bacteria and eliminates the chance that ***TB disease*** will develop in the future. The decision to offer clients preventative treatment is made by TB doctors. Decisions are based upon many factors including:

- Age and health status of client
- Presence of risk factors for progressing to ***TB disease***
- Likelihood of side effects from medications
- Likelihood of completing treatment

Accepting the treatment for **TB infection** is the client's choice. The risks and benefits of taking the medications should be clearly outlined to the client so that they are able to make an informed decision. In an effort to eliminate TB, health care professionals need to support clients in their decision to initiate and complete treatment for **TB infection**. It is important to let the client know that by taking the medication to prevent ***TB disease*** he/she will be protecting his/her family and friends, as well as him/herself. Medication for **TB infection** is administered by Directly Observed Preventative Therapy (DOPT).

Curing TB infection prevents future cases of disease and subsequent transmission of TB throughout the community

Candidates for Treatment of TB Infection

Individuals who have a significant TB skin test and:

- Have had recent contact with a contagious case of ***TB disease***
- Have conditions that reduce the body's ability to fight infection (for example, HIV/AIDS, long term steroid use, some types of cancer, use of some types of arthritis medications)
- Have significant lung scars (without adequate treatment)
- Are under 35 years of age
    - In general, people 35 years of age and younger tolerate TB medications with few side effects. However, individuals over the age of 35 who are at increased risk for developing TB disease may be recommended preventative treatment. In these situations, their risk of developing TB disease is weighed against the risk of side effects and in some situations, treatment may be offered
- Are health care workers OR are residents of shared living environments
    - These individuals are often offered preventative treatment because if they were to develop ***TB disease***, they have the potential to infect many people

TB Disease

TB infection may progress to ***TB disease*** if the immune system cannot keep the bacteria asleep. This may happen months or years after having been infected with the TB germ **OR** it may never happen. ***TB disease*** develops when the body's fighter cells ("macrophages") are no longer able to contain the germs. The hard shell surrounding the bacteria break down and TB germs escape and multiply. This process can occur anywhere in the body. The germs cause damage to the tissues in which they are growing.

Possible Sites of TB Disease:

- Kidneys
- Bone
- Brain
- Spinal cord
- Lymph nodes
- Lungs (this is the most common type in adults)

Only TB of the lungs and voice box are contagious.

Because *TB disease* can be spread and result in many people becoming infected, it is important that people with *TB disease* are identified early and given adequate treatment. Without treatment, the germs continue to multiply and cause damage to the body. TB can be fatal if not treated.

Diagnosis of TB Disease

Diagnosis of ***TB disease*** is made using:

- Medical history
- Physical examination & symptom inquiry
- Chest x-ray
- Sputum or other specimen tests (for example, tissue)

Treatment for TB Disease

TB has been a curable disease since the 1950s.

Some facts about TB treatment:

- Treatment is achieved with several antibiotics (**Isoniazid™**, **Rifampin™**, **Pyrazinamide™** and **Ethambutal™**).
- **Treatment usually lasts six to nine months but may be longer in some situations** (for example, client is not able to take one or more of the antibiotics; the client has a certain type of TB such as TB meningitis).
- Medication for ***TB disease*** is administered by Directly Observed Therapy (DOT)
- Treatment of ***TB disease*** is mandatory under the *Ontario Ministry of Health and Long Term Care - Tuberculosis Protocol.* While receiving treatment, individuals are watched closely for side effects

Blood work is done before and throughout treatment to ensure that the liver is tolerating the medications.

Directly Observed Therapy (DOT)

Directly Observed Therapy means that a health professional (or someone with special DOT training) ensures that all doses of the medications are delivered, swallowed, monitored for side effects and documented. DOT helps clients with TB finish all of their medications – ensuring that they will be cured of TB. If a client stops taking their medications before the end of treatment, the TB germ has the potential to change itself into a germ that cannot be killed by antibiotics. These germs are called "resistant" and are very hard to kill. DOT helps prevent resistant germs from developing.

Individuals assigned the task of delivering DOT must complete the preparation for this task as outlined in the *Directly Observed Therapy Manual*.

Early Identification of Cases of TB Disease

Early identification and treatment of ***TB disease*** are critical strategies required to eliminate TB from communities. Treating cases of TB promptly prevents the spread of the disease within communities. Community members (health care workers and lay people) need to be aware of the symptoms of TB and who to call if they know someone who is symptomatic. Providing community members with the right information will help prevent TB in their community.

Symptoms of TB disease in adults	Symptoms of TB disease in children
• Cough lasting three weeks or more • Fever • Loss of appetite • Weight loss • Night sweats • Fatigue	Young children do not often have the obvious symptoms of TB because their immune systems are not mature. They may have these general symptoms: • Cough (with no phlegm) • Fever • Feeling sick • Extreme lack of energy • No appetite • Weight loss • Noises in the chest when breathing • Lumpy rash and sore eyes

Screening for TB

"Screening" is a tool used to identify diseases early so that treatment can be started promptly. Early identification helps reduce the negative impact on people's health and reduces the spread of disease. Screening programs are only as successful as the follow-up that accompanies them. Groups should be screened only when resources exist to provide treatment for individuals diagnosed with **TB infection** or ***TB disease***.

Why Screen for TB?

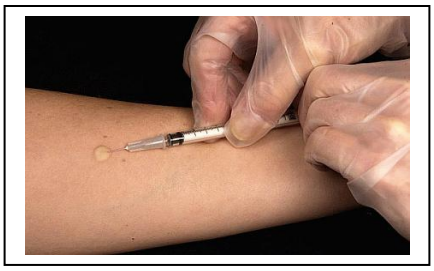
1. Screening encourages early identification and treatment of **TB infection** and ***TB disease***
2. Screening provides an indication of how prevalent TB is in the community

Groups Commonly Screened for TB Include:

- Individuals living in shared living environments (for example, nursing homes)
- People who are at increased risk of developing ***TB disease*** from **TB infection** (for example, weak immune systems)
- Individuals who may be exposed to infectious cases of TB (for example, health care workers)
- People who have the potential to transmit TB to many people if they were to develop ***TB disease*** (for example, health care workers)
- Individuals who are good candidates for preventative treatment (for example, school aged children). In some zones within Ontario Region children ages 4 and 14 are routinely screened.

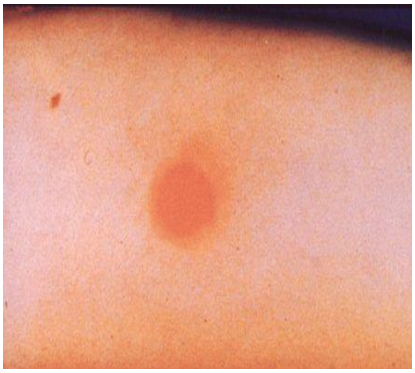
TB screening tools include:

- Symptom inquiry
- Tuberculin skin testing (TST)
- Sputum or other specimen (for example, tissue)
- Chest x-ray



The Tuberculin Skin Test (TST)

The tuberculin skin test (TST) is a tool used to determine if there are TB germs present in the body. A "significant" reaction means that the person has **TB infection** (LTBI).



Tuberculin skin testing is used to identify TB infection, not TB disease.

Significant (positive) reactions must be followed up.

A significant skin test reaction means that the individual has been infected with the TB germ and needs to be further assessed to see if they have ***TB disease***.

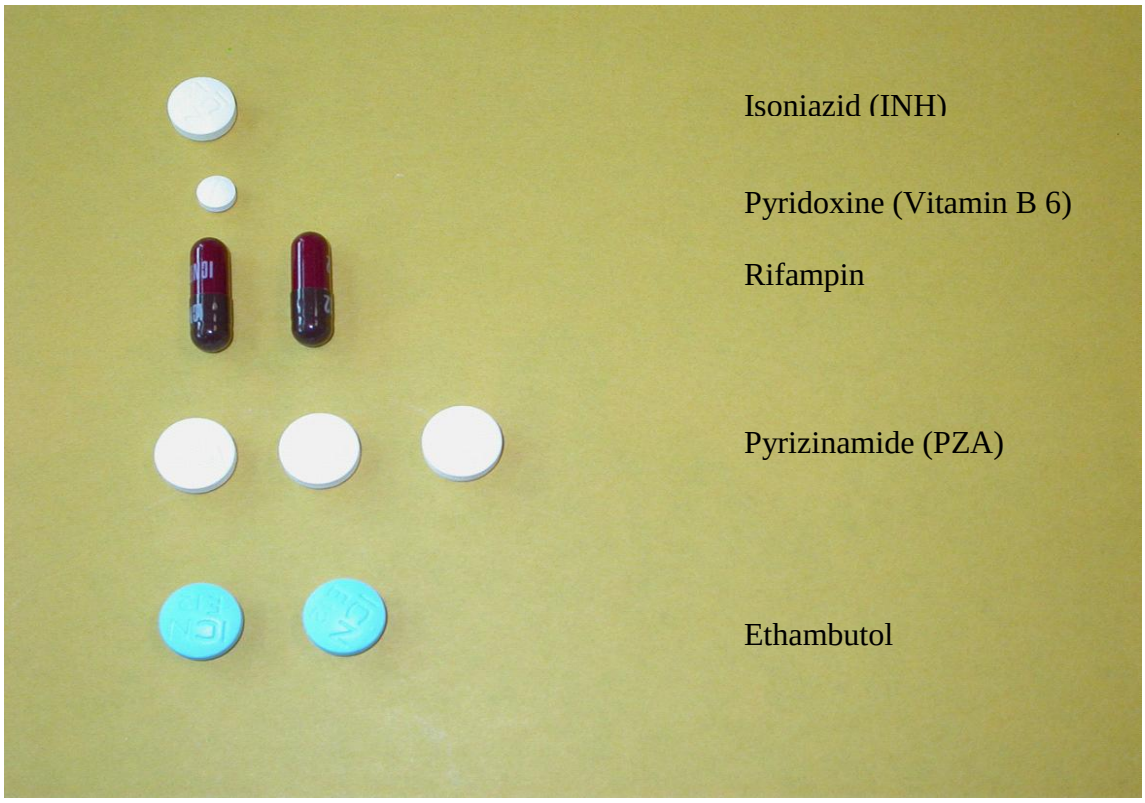
As discussed previously, those with **TB infection** may be offered medication to treat the infection before it has a chance to develop into ***TB disease***.

Conclusion

TB picture has changed greatly in the past 50 years. TB is curable and preventable. With diligent work and keeping awareness in communities high we can make strong steps towards eliminating TB.

Let's prevent future generations from having TB!

Chapter 3: Tuberculosis Medications



3.1 Tuberculosis Medication and Side Effects

Medications	Most Common Side Effects Report any side effect to the nurse as soon as possible	Action/Possible Solutions	Other Comments
All TB Medications	**Allergic Reaction:** • Fever • Itchiness • Rash • Difficulty Breathing (Rare)	**Seek medical attention immediately if difficulty breathing occurs.** • Medication change • Antihistamines	Always check with pharmacist for possible interactions between client's TB medications and other medications
Isoniazid (INH) 	**Liver Irritation:** • Abdominal pain • Nausea and vomiting • Tiredness • Loss of appetite	**If liver enzymes (AST/ALT) are abnormal**: • Monitor enzymes • Medication change	
	Stomach upset	**With Normal AST/ALT levels:** • Try taking medication with food • May resolve once client is used to medication • Physician may recommend anti nausea medication	
	Tiredness	**With Normal AST/ALT levels:** • Alter time of day medication is taken • Usually resolves within first month	
	Tingling in fingers/toes (nerves)	Physician may increase doses of vitamin B6	
Rifampin (RIF) 	**Liver Irritation:** • Abdominal pain • Nausea and vomiting • Tiredness • Loss of appetite	**If liver enzymes (AST/ALT) are abnormal:** • Monitor enzymes • Medication change	Be especially aware of interactions with other medications (i.e. birth control pills, some diabetes medications)
	Stomach upset	**With Normal AST/ALT levels:** • Try taking medication with food • May resolve once client is used to medication	
	Tiredness	**With Normal AST/ALT levels:** • Alter time of day medication is taken Usually resolves within first month	
	Red/Orange discoloration of body fluids (tears, urine, sweat)	**Discoloration is NORMAL** • Warn client • May stain contact lenses	

Pyrazinamide (PZA) 	**Liver Irritation:** • Abdominal pain • Nausea and vomiting • Tiredness • Loss of appetite	**If liver enzymes (AST/ALT) are abnormal:** • Monitor enzymes • Medication change	**NOT** recommended in pregnancy
	Stomach upset	**With Normal AST/ALT levels:** • Try taking medication with food • May resolve once client is used to medication	
	Tiredness	**With Normal AST/ALT levels**: • Alter time of day medication is taken • Usually resolves within first month	
	Joint pain and/or gout	**Depending on severity** • Medication change	
Ethambutol (ETH) 	**Visual changes** • Visual acuity • Colour perception	Medication change	NOT recommended for children who cannot be monitored for vision changes.

3.2 Drug Resistant Tuberculosis

Drug resistant tuberculosis is a type of TB that cannot be killed by the most common kinds of TB antibiotics. Drug resistant TB develops when TB medicines are used inappropriately, allowing the TB germ to change itself so that the medications no longer work. Resistance can happen when treatment fails. Treatment might fail if:

- Not enough medication is given (too small a dose)
- The whole dose is not taken
- Not enough kinds of TB medicines are taken together
- Too many doses are missed
- Starting and stopping medication frequently

People can also get drug resistant TB by breathing in a germ that is already drug resistant or if their medication treatment for TB had failed in the past.

In some countries (NOT Canada) TB drugs can be purchased by anyone without a prescription. This has contributed to incorrect use of the drugs and the development of drug resistant TB. In other cases, doctors who are not experienced with TB have prescribed medications incorrectly, again, leading to drug resistant TB. Directly Observed Therapy helps prevent drug resistant TB by helping clients take their medicine correctly.

There are limited numbers of medicines that are effective against TB. If one or more of these medicines are not effective because the germ has become resistant the treatment becomes longer and more complicated. Preventing drug resistant TB is very important. **It is vital that you help your clients take and complete their full course of medications exactly as prescribed.**

Drug resistant TB is very unusual in First Nations communities. This is due at least in part to the fact that medication is delivered with Directly Observed Therapy.

3.3 Tips for DOT Workers When Giving Medication

Be observant. Individualize. Be flexible.

- Pills may be crushed with a pill crusher (available in most pharmacies) or between two spoons
- Capsules may be opened and powder emptied out. Remember even the powdered form of Rifampin can stain skin and clothing
- Crushing tablets and opening capsules and mixing with food or liquid should be done **just prior to administering** the medication and with the **minimum volume** required to mix the medication
- If medication is not used within one half hour of mixing with liquid or food discard and start again

Liquid and food suggestions for mixing with crushed and powdered medications:

Liquids:

Koolaid: Add 1 teaspoon of sweetened Koolaid powder

- Mix in 1 or 2 teaspoons water. Stir until mixed well.
- Feed to child using syringe, medicine dropper or spoon

Juices: Use one with a strong, sweet flavour (such as orange juice)

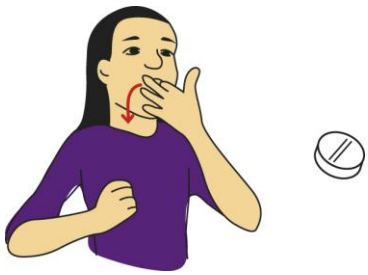
- Mix powdered medications with 1 or 2 tablespoons of juice
- Stir until mixed
- Feed to child using syringe, medicine dropper or spoon

Foods:

Examples: applesauce, bananas, jelly or jam

- Mix powdered medications with 1 or 2 tablespoons of food
- Stir until mixed
- Feed to child using spoon

Hints for swallowing pills and capsules:



**Tablets tend to SINK;
so tilt your head UP to swallow.**

**Capsules tend to FLOAT, so tilt your head DOWN
when you swallow.**

3.4 Incentives and Enablers

Incentives and enablers help with motivation and with overcoming barriers that may otherwise prevent a client from successfully completing his/her treatment. They are tools that can also help build a positive relationship with the client.

Incentives are what motivate clients to take their medicine, keep their appointments and/or get necessary testing done. An incentive can be just about anything (for example, a friendly smile, cup of coffee, ice cream, etc.). Some people find that getting healthy is incentive enough to take TB medications. Others do not. The key to using incentives is to determine what is important or meaningful to each client. Discovering a client's likes, dislikes, interests and hobbies can make incentives more effective. Providing a variety of choices allows for change from time to time.

Enablers are similar to incentives. Enablers help the client overcome barriers. Some barriers a client may experience include:

- Lack of transportation
- Fear
- Past experiences
- Substance abuse
- No babysitter
- Family beliefs
- Inability to take time off work

An example of using an enabler would be to arrange transportation for a client who does not have a vehicle and needs to come to the clinic for follow up or providing a snack for the person to take with their pills if the medications upset their stomach.

Further examples of incentives and enablers:

Food	Coffee, applesauce, fruit, ice cream, pudding, juice
Clothing	Socks, gloves, department store gift certificate
Automotive	Gasoline, motor oil, oil change certificate
Entertainment	Movie tickets, movie rental ticket
Services	Restaurant or hair salon gift certificates
Transportation	Arranging a ride with medical transportation, bus fare/ passes, taxi
Personal Care	Make up, nail polish, cologne, body wash, hair salon gift certificate
Hobby supplies	Gardening, books
Celebration	For client on completion, acknowledge birthdays, certificate of completion
Children	Bibs to protect clothing. Be sure items are age appropriate and safe. Younger children will likely enjoy a small item with every dose rather than wait for a big item at the end of treatment. Crayons, coloring books, small story books, toys, stickers (for example, Smile Makers).

Chapter 4: Managing Directly Observed Therapy

4.1 Principles of Directly Observed Therapy

- A trained DOT worker delivers each dose of TB medication
- A DOT worker can be a:
    - Community Health Nurse
    - Community Health Representative with DOT training and when assigned by the supervising nurse
    - Lay person with DOT training when assigned the task by the supervising nurse. A close family member of the recipient of medications may not be an appropriate choice as that client's DOT worker
- The DOT worker watches the client swallow each dose of medication. Medication must never be left with the client
- The DOT worker assesses the client for side effects with each dose of medication
- The DOT worker documents all pertinent information of DOT administration in a timely fashion

4.2 Advantages of Directly Observed Therapy

- DOT is the best way to cure and prevent the spread of TB in the community
- The client is supported to successfully complete the full course of medication
- The client is monitored closely for side effects of medications and supported to work through the side effects appropriately
- The client is encouraged and supported to complete required check ups - blood work, chest x-rays, etc
- A trust relationship often develops between the DOT worker and the client. This relationship:
    - Reduces fears about TB and its treatment
    - Increases comfort level for the client to ask questions
    - Improves the quality of health care for the client - workers can be an important link for the client to other community resources - advocacy
    - Reduces the possibility of TB germs becoming resistant to the medication

4.3 Roles and Responsibilities of DOT Team

This document is meant to guide the practice and clarify the roles of each TB DOT team member within the community. The DOT worker role may be taken on by a Community Health Nurse, a Community Health Representative or an individual hired and trained as a DOT worker.

Community Health Nurse	DOT Worker	Health Director
• Ensures competency of DOT worker's skills and knowledge • Trains DOT workers as needed • Ensures safe and correct storage of TB medications • Sets up reporting and documentation system • Receives and checks medication against prescription • Does medication teaching with client beginning TB meds • Ensures required testing is completed • Communicates with CD Nurse re: side effects, client concerns, missed doses as appropriate • Orders more medication as needed • Is available to advise and support DOT worker at all times when worker is on duty or identifies a designate for this role • Reviews client progress with DOT worker every one to two weeks • Sees and assesses client monthly • Answers client and DOT worker's questions • Acts as client advocate	• Completes DOT training skills and knowledge and accepts assignment of DOT tasks • Visually checks TB medications • Meets with client, assesses for side effects and administers TB medications according to principles of directly observed therapy • Never leaves medication for client to take on own • Notifies client of needed follow up (lab work, chest x-rays, etc) • Supports client to complete necessary follow up • Reports all side effects, missed doses and client concerns to supervising nurse immediately • Reviews client progress with supervising nurse every one to two weeks • Documents all pertinent information on DOT record • Stores medications safely and correctly • Treats all client medication, documents and information with confidentiality • Supports TB teaching done by CHN • Provides cultural and language support to CHN/client relationship as appropriate • Acts as advocate for client • Answers client questions when appropriate; refers question to CHN when appropriate • Aids TB team with other TB program related activities upon completion of training and time permitting	• Requests funding for DOT worker position as appropriate • Ensures work plan for DOT worker position is submitted to Regional Office • Arranges acquisition of incentives/enablers to support program

4.4 DOT Procedures

Initiating Treatment of Latent TB Infection (also called prophylaxis) DOPT

Before prophylaxis can begin **TB disease** must be ruled out. The client will require:

- Medical assessment from family doctor
- Chest x-ray if not already done
- Sputum sample for AFB (TB germs) if not already done
- Baseline blood work. The Community Health Nurse (CHN) can arrange in conjunction with family doctor. A conversation at this time with the family doctor can set up arrangements for follow up blood work as well
- Weight check (to determine correct dosages of medication)
- The family doctor indicates in the chart that they agree with the recommendation and agree to monitor their client's progress as needed while on the medication
- The CHN indicates in the chart that they have discussed the medication with the client and that the client has agreed to take the medication.

Initiating Community Directly Observed Therapy for Treatment of Tuberculosis Disease

Most clients with **TB disease** will have had their treatment initiated in hospital. Prior to discharge from hospital, the CHN will receive a call that the client is returning home and will be forwarded their medication and updates (indicating doctor's orders and follow up). The family doctor will also receive a copy of the client's prescription and required follow up.

For clients that may start treatment for TB disease in their home community, the CHN and the CD nurse will work with the public health unit and regional TB co-ordinator to arrange case management and initiation of treatment.

4.5 Setting up DOT or DOPT

DOT is the FNIH standard for providing medication to all clients taking TB medications (TB disease or latent TB). Set up a place and time to meet the client that works for both the client and the worker. Flexibility with the time and place to meet with the client can be very important. Ensure client confidentiality is maintained.

Most DOT is performed twice weekly. A Monday/Thursday schedule is recommended as it allows some leeway in the work week to still give both doses required should the client miss the first (Monday) dose. There should be at least a 72 hour interval between twice weekly doses. There may be circumstances when DOT is daily or three times weekly, usually when beginning treatment of disease or if a client is unable to tolerate twice weekly doses. The direction for frequency of medication will come from the public health unit in collaboration with the ordering physician.

It is the CHN's role to check with the client's pharmacist about potential drug interaction with the client's other medications, including herbal and traditional medicines.
The client should be instructed to inform the CHN or DOT worker if they have any new medications prescribed.

Nurses in the community may not have a medical directive for dispensing of medications, and therefore would not be able to repackage the TB medications. A partnership with the local public health unit that is providing the tuberculosis medication is required; all issues related to dispensing of TB medications can be brought to the attention of the Communicable Disease Nurse and the Regional TB Coordinator. The dispensing of TB medications is covered in the Ontario Ministry of Health and Long Term Care-Tuberculosis protocol.

Before beginning medications, the CHN reviews the medications and any possible side effects or drug interactions with the client. The DOT worker must also be aware of possible side effects of each client's medications. The first two or three doses should be delivered and observed by the supervising nurse to allow the opportunity for teaching and observation for reactions and side effects. Subsequent doses may be delivered by other trained members of the DOT team. While the DOT worker is being trained, the nurse and DOT worker should visit the client together until the nurse is confident the DOT worker is comfortable and competent with the necessary skills.

All doses of medication must be observed. It is NOT acceptable practice to leave a dose of medication with a client to take on their own at a later time. Should the client forget or choose not to take the medication this can lead to failure of the treatment and the development of drug resistant tuberculosis. If a client is unable to take a dose of medication at the time of a DOT worker's visit, the worker should set another time to administer the dose within the required time frame. If an alternate time cannot be found, mark the dose as missed and report the missed dose to the supervising nurse. Do not leave TB medication with the client. The client should be encouraged to inform the CHN or DOT worker well ahead of time about any travel plans. Arrangements for medication can be made for while the client is away - this should be discussed with the CD nurse.

4.6 Delivering Directly Observed Therapy

The CHN records the initiation of DOT in the client's community health record progress notes. The *Tuberculosis DOT Checklist and Record* (see Section 7.2) is used as the record of medication and management.

Using the Tuberculosis DOT Checklist and Record

- Review side effects since last dosage
- Document presence or absence of side effects
- If side effects are present report them to the supervising nurse & **hold** medication until advised by the supervising nurse. The nurse should be available for the DOT worker to consult
- Record findings and actions on field notes
- If no side effects, give medication and observe dose being swallowed
- Document time, watched client swallow pills, and DOT workers initials
- Inform client of required follow up tests as needed
- Report any missed dose to supervising nurse immediately

A calendar is useful as a quick reference for tracking number of doses taken and when doses are due. Use an X over the dates doses were given and an O over the dates of missed doses.

Ensure confidentiality during each visit with the client. Maintain confidentiality of all client records and personal information at all times. Maintain safe and secure storage of medication.

The CHN reviews each client's progress every **one to two weeks** with the DOT worker and sees each client for assessment (signs and symptoms of TB, side effects of medication, general health) **monthly**. Regular communication between DOT team members is vital for the smooth and safe delivery of DOT. A plan for communication should be set in place.

The supervising nurse must be available in person or by telephone to the DOT worker in case of client side effects or other questions and concerns. If the supervising nurse for any reason is not available, a designate nurse must be identified. The designate must agree to take on the supervising role and to be available to the DOT worker. All side effects, concerns or questions from the client or about client care need to be forwarded directly to the nurse as soon as possible.

4.7 Compliance Reporting

The supervising nurse is responsible for completing and forwarding the compliance reports as requested by the Public Health Unit.

4.8 Other Tuberculosis Follow-up for DOT Clients

Regular blood work is essential for safe management of tuberculosis treatment to be sure the body is tolerating the medication.

It is the supervising nurse's responsibility to initiate these tests and report the results to the CD nurse. Normal results may be forwarded by mail or fax. Results out of normal range must be reported immediately by telephone to the CD nurse for further direction. The family doctor must also be notified by phone or fax. The DOT Worker can remind clients and help to make arrangements to complete the tests. When DOT Workers are trained and assigned the task, they may gather sputum samples.

Chapter 5: Administration

5.1 Safety and Home Visiting

The DOT worker should never put himself/herself in danger. If a worker is in doubt about his or her safety he or she should withdraw from the situation. A new meeting place may need to be arranged.

Discuss home visiting safety with the DOT team and Nurse in Charge. Your health facility may have safety policies in place.

Document and report all incidents to the supervising nurse and health director. Safety should be carefully considered when setting up the meeting place for DOT.

Things to consider in assessing for safety are:

- Surroundings for animals
- Unpredictable situations (for example, where alcohol or drug use may be happening)
- Physical hazards, isolation
- Weather hazards
- Vehicle safety

5.2 Confidentiality

DOT workers have a legal and moral obligation to ensure every client's confidentiality.

- Consider client privacy when making your arrangements to meet to give the medications
- All information about a client should be kept private and shared with no one who is not involved with the client's care
- All client records and medicine must be kept secure where only authorized people have access to them
- DOT worker may be required to complete an oath of confidentiality according to health facility policy

5.3 Suggested Questions for Interviewing Candidates for DOT Worker Position

1. Why did you apply for this position?
2. What qualities make you the right candidate for this position?
3. What factors contribute to the success of any teamwork environment?
4. Tell me what you know about tuberculosis.
5. Describe an obstacle you have faced in a previous work environment. What did you do to overcome that obstacle?
6. What qualities do you feel are important for any "health" worker to possess?
7. Do you have a valid driver's licence and a vehicle for work?
8. This position requires that you work with a variety of clients. Talk about your experience with members from a variety of age groups.
9. Describe your understanding of responsibilities for the TB DOT Workers position.

5.4 Sample Job Posting

Employment Opportunity

Position Title: Direct Observed Therapy Worker

Job Summary:

Works with the community health team to deliver and administer tuberculosis medications to community members according to TB program protocol. This includes adherence to principles of Directly Observed Therapy (DOT), client confidentiality and safe medication administration.

Qualifications:

- Mature responsible caring individual
- Effective interpersonal and communication skills, written and verbal
- Must have valid driver's licence and vehicle for work. Mileage costs will be compensated
- Must complete on the job training
- Ability to speak local language an asset
- Please apply to **name (xxxx) at: (address)** by **(DD/MM/YYYY)**

The Directly Observed Therapy worker, under the direction of the supervising nurse, will:

- Deliver and watch clients take their TB medication according to DOT procedures.
- Never leave TB medication for clients to take on their own.
- Monitor client for side effects with each dose of medication
- Advise clients of follow up required
- Uses incentives and enablers as appropriate
- Respond to clients in a caring compassionate manner
- Answers client questions and concerns about their treatment within their knowledge.

Refer other questions and concerns to supervising nurse

- Refer to and discuss with the supervising nurse any client related problems or complaints as they occur
- Complete charting on the Tubersulosis DOT Checklist and Record at each client visit
- Document on progress notes when needed
- Report at least every two weeks on each client's progress to the supervising nurse
- Be responsible for ensuring own means of transportation
- Performs other duties related to the TB program when trained and assigned to do so by the supervising nurse

Chapter 6: Glossary

AFB: Acid Fast Bacilli. Test for checking for TB germs.

Antibiotic: Medication able to kill or slow down the development of specific living organisms (i.e. bacteria) used to treat infections.

AST: One of the tests done to measure the health of the liver.

Barriers: Word to describe problems or reasons why a person cannot do something or has difficulty doing something.

CBC: Complete blood count. Measures health of the blood.

CHN: Community Health Nurse.

CHR: Community Health Representative.

Disease: A specific illness or disorder (characterized by a set of signs and symptoms).

DOT: Directly Observed Therapy: when a trained person watches a patient/client swallow their medication.

DOT worker: Lay person or health professional who takes on the role of giving Directly Observed Therapy medication.

DOPT worker: Lay person or health professional who takes on the role of giving Directly Observed Preventative Therapy medication for treatment of LTBI.

Enzymes: A substance produced by the body which acts as a helper to promote specific biochemical reactions.

FNIH: First Nation and Inuit Health.

Germs: Disease producing organisms.

HIV: Human Immunodeficiency Virus: the virus that is associated with AIDS.

Inadequate: Not sufficient; not enough; incomplete.

Immune system: The body's natural defence system against disease and infection: the germ fighter.

Infection: Invasion of the body by germs.

Infectious: When a person is able to pass on an infection to another.

Interaction: Mixing, sometimes TB medication will interact with other medicine and cause undesirable effects.

Latent TB infection: The dormant stage of tuberculosis. Latent TB is not contagious.

Lateral side: A chest x-ray taken from the side view.

Lay person:	An individual not previously trained or educated in a particular area of knowledge.
Liver:	The largest gland in the body. The liver has over 500 functions, this organ is essential for living.
Lymph nodes:	Small oval structures throughout the body that help to fight infection. Most of these structures are found in the mouth, neck, under the arms and in the groin.
Macrophages:	The immune system's fighter cells. When TB germs are inhaled macrophages wall the germs off to keep the germs from spreading and growing.
Nausea:	Feeling like 'throwing up": feeling "sick to your stomach."
Unregulated Care Providers:	A term used in the Health Professions act that refers to workers in the health field that do not have their own registration and governing bodies.
Platelets:	Part of the blood system. Platelets are one of the keys to blood clotting.
P-A:	Posterior Anterior. The positioning of the body for a chest x-ray. The x-ray is taken from the back.
Resistant:	A germ that is difficult or impossible to treat with antibiotics.
Screening:	A tool used to identify cases of diseases early so that treatment can be started promptly.
Side effect:	A reaction that happens from taking a medication.
Sign:	Something that can be observed or seen that may indicate that a person is sick.
Sputum:	Material coughed up from the lungs; phlegm; mucus.
Sputum culture:	A sample of sputum is put into a germ friendly environment to see if any germs will grow. If there are TB germs in the sputum sample, they will grow and the sample will be called culture "positive." A specimen culture is the "gold standard" or best way to TB diagnosis.
Sputum smear:	A small sample of sputum is smeared on a plate, stained and examined under a microscope. When organisms are found on the smear the sample is called "smear positive" and the patient will be considered contagious.
Symptoms:	Anything unusual or different that a client notices about himself or herself that may be a sign of disease or illness (e.g. sleepiness, loss of appetite, nausea, pain); a complaint.
TB:	Tuberculosis.
TB disease:	TB disease means the TB germs are awake and causing harm to the body. TB disease of the lungs can be contagious and spread to others.

Therapy: The treatment of disease; prescribed medication that is usually taken over an extended period of time.

Transmission: The spread of infectious material from one person to another.

Chapter 7: FORMS

The following forms are available for download on www.onehealth.ca or can be sent via email or fax:

7.1 DOT Skills Assignment Checklist
7.2 Tuberculosis DOT Checklist and Record

7.1 DOT Skills Assignment Checklist

DOT Worker Name				
Tuberculosis Knowledge				
1.	General TB Information TB Infection and TB disease Transmission, diagnosis and treatment of TB Groups at risk Fears and beliefs around TB			
		Date	DOTW	CHN
2.	Managing and Delivering DOT Roles and responsibilities Principles of delivery of DOT Documenting doses, side effects, field notes Communication			
		Date	DOTW	CHN
3.	Medication for TB Medications commonly used for treatment of TB Storage of medication Possible side effects Expected vs problematic side effects Assessing for side effects Strategies for dealing with side effects Reporting procedure for side effects When to hold medications Standard medication schedules Using incentives and enablers			
		Date	DOTW	CHN
4.	Administration Confidentiality Home visiting			
		Date	DOTW	CHN
	Test Successfully Completed			
	Date			
	DOTW Signature			
	Supervisor Signature			

7.2 Tuberculosis DOT Checklist and Record

First Nations and Inuit Health - Ontario Region Tuberculosis DOT Checklist and Record	
TB File	Primary DOT Worker:
Supervising Nurse:	Client Name:
Gender: M or F Weight:	Phone #
DOB dd/mmm/yyyy	
Address	

Medication Prescriptions	
Date:	Incentives:

Date:									
Side Effects Checklist (Y = Yes) or (N = No)									
Rash/Itching									
Fever, Chills or Aches									
Very Tired/Weak									
Nausea/Vomiting									
Yellowing of Eyes or Skin									
Dizzy/Unsteady									
Trouble Seeing (ETH)									
Tingling of hands or Feet (INH)									
Joint Pain (PZA)									
Nurse Notified									

Directly Observed Therapy

Observed client swallow pills									
Time									
DOT Worker initials									
Nurse Review									

Follow Up Tests

Chest X-Ray	Due: _____	Req Given ☐	Completed ☐
Sputum (AFB)	Due: _____	Req Given ☐	Completed ☐
Blood Work	Due:	Req Given ☐	Completed ☐

Initials Signature Designation

Chapter 8: Appendix

Pre and Post Test: ANSWERS

1. ***What is tuberculosis?***

   A disease caused by the TB germ, (mycobacterium tuberculosis),usually occurs in the lungs but can affect other parts of the body.

2. ***Describe how TB is spread*.**

   Someone with TB disease coughs the germs out into the air. The people around sharing the same air breathe in the germs.

3. ***What test is done to see if someone has been infected with the TB germ?***

   The TB skin test (TST) also called Mantoux test, tuberculin test.

4. ***What does DOT mean?***

   Directly Observed Therapy

5. ***What medication is offered to people who have TB infection?***

   Usually isoniazid and rifampin
   Sometimes isoniazid on its own

6. ***How long must medication for TB infection be taken?***

   Six to nine months or longer

7. ***List three signs and symptoms of TB disease.***

Fever	**Night sweats**	**Weight loss**
Cough longer than three weeks	**Lack of appetite**	**Extreme fatigue**

8. ***Explain the difference between TB infection and TB disease.***

   In TB infection the germs are in the body but are dormant and not causing damage or sickness. A person with TB infection is not contagious. In TB disease the germs are awake, active and causing damage to the body. The person likely feels ill, has symptoms. When TB disease is in the lungs the TB germ can be coughed out and spread to others.

9. ***List two groups of people that are at greater risk for getting TB disease:***

Any two of the following:

Malnutrition	**HIV**	**Lung cancer**
Blood cancers	**Silicosis**	**Chronic steroid use**
Alcohol/IV drug abuse	**Renal failure**	**Radiotherapy**
Poorly controlled diabetes	**Organ transplant**	**Carcinoma of head and neck**

10. ***Name four medications commonly used to treat TB disease:***

Isoniazid, rifampin, ethambutol, pyrazinamide

11. ***What can happen if TB medication is stopped too early or taken irregularly?***

TB disease can develop or return. Drug resistant TB can develop.

12. ***List five side effects of TB medication:***

Rash/itching	**Feeling very tired and weak**	**Nausea/vomiting**
Fever, chills, aching	**Dizziness, unsteadiness**	**Dark tea coloured urine**
Joint pain	**Difficulty seeing**	**Sore abdomen**
Tingling of hands and feet	**Yellowing of skin and eyes**	

13. ***List the two special warning about Rifampin that clients who are taking this medication need to know:***

The medicine could interfere with other medications, for example birth control pills.

The medicine will turn tears, urine and other body fluids orange-coloured; the medicine will stain contact lenses.

14. ***What part of the body can be damaged by drinking alcohol while taking TB medication?***

The liver

15. ***List two barriers that a client may experience that may keep him/her from taking his/her medication regularly.***

Lack of transportation	**Past experiences**	**No babysitter**
Family beliefs	**Substance abuse**	**Inability to take time off**
Fear		

16. ***List five incentive/enablers that could be used to help a client complete his/her treatment.***

Rides to clinic **Personal care items** **Clothing**
Stickers, small safe toys **Gift certificates**
Celebrations when complete meds **Food or juice to take medicine with**

Any other answers deemed acceptable by supervising nurse

17. ***List three reasons documentation is a vital part of client care***

- **Documenting each interaction with the client keeps track of client's medication and any associated reactions**
- **Monitors status of treatment**
- **Communication with other health care team members**
- **Legal record of client's care**

18. ***Under what circumstances would it be appropriate to leave medication with a client?***

None

19. ***Whose role is it to prepare the individual doses of client medications?***

Community Health Nurse

20. ***How often should DOT worker and nurse review clients' progress?***

Weekly

21. ***The chief has asked you who is on your client list. What do you do?***

Let the chief know that all client information is confidential and you are not able to give that information to him/her.