## TAIMA TB Training Manual



# You may not know you have TB - get tested, get treated before you get sick!

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#### **Purpose**

This manual was developed as a training tool as part of the TAIMA TB project. The manual is meant as a general overview of TB for lay persons working in the TAIMA TB program. It is not meant to be a comprehensive guide for the training of lay health care workers. It was used in conjunction with one on one, on the job training by the TAIMA TB nurses who had significant experience with TB in Nunavut. The guidelines found in the Canadian Tuberculosis Standards 6<sup>th</sup> Edition should be used as the central guide for TB education in Canada <a href="http://www.phac-aspc.gc.ca/tbpc-latb/pubs/pdf/tbstand07">http://www.phac-aspc.gc.ca/tbpc-latb/pubs/pdf/tbstand07</a> e.pdf

#### **Contribution Acknowledgement**

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#### **Resources**

Directly Observed Therapy Manual 2007, Health Canada, FNIHB, Alberta Region

Shauna Buchholz. (March 2009). <u>Directly Observed Therapy (DOT) Manual for Tuberculosis Programs in</u> <u>British Columbia</u>, March 2010, BC Centre for Disease Control, Vancouver, BC

Canadian Tuberculosis Standards 6<sup>th</sup> Edition 2007 <a href="http://www.phac-aspc.gc.ca/tbpc-latb/pubs/pdf/tbstand07">http://www.phac-aspc.gc.ca/tbpc-latb/pubs/pdf/tbstand07</a> e.pdf

CRNBC (October 2010). Privacy and Confidentiality: Practice Standard for Registered Nurses and Nurse Practitioners. In *College of Registered Nurses of British Columbia*. Retrieved May 4, 2011, from <a href="https://www.crnbc.ca/Standards/Lists/StandardResources/400ConfidentialityPracStd.pdf">https://www.crnbc.ca/Standards/Lists/StandardResources/400ConfidentialityPracStd.pdf</a>

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## Executive Summary

This report is an overview of the progress of the TAIMA TB project which will conclude in the fall of 2012.

TAIMA TB is a new public health campaign that was piloted in Igaluit, Nunavut to:

- raise awareness about tuberculosis (TB)
- provide in home screening for latent TB infection (LTBI) for people who live in areas of the community with a high incidence of TB
- provide treatment to individuals at high risk for the development of active TB

#### What did the TAIMA TB project accomplish?

Community involvement occurred at all levels including the introduction, design, implementation and delivery of the program. Educational TB messaging (a slogan and 5 TB facts) was developed by local Inuit representatives and local TB health care professionals with consideration of the historical Canadian Inuit TB context. Precise translation of the facts into the local dialect of Inuktitut was undertaken and tested in a community focus group. The messaging was then integrated into YouTube videos done by community members. The YouTube videos and TB messaging were then put on DVD as a vehicle to support the oral Inuit tradition for the sharing of information. The DVDs were shown to participants of the door to door program by community members (TB champions) in their language of choice (English or Inuktitut). This format allowed messaging to be delivered in a standardized and reproducible manner. A website and Facebook page were generated and used in the project.

During the general awareness campaign, there was an increase in the number of people who presented to public health to get tested for TB. Four hundred and forty four people received TB education in their homes delivered by an Inuktitut-speaking community member (TB champion) and a TB nurse using the YouTube videos based on the 5 TAIMA TB facts. One third were not eligible for screening because of previous TB treatment, the remaining two thirds were screened for latent TB infection (LTBI). Approximately one third of people screened were recommended LTBI treatment because of positive tests. Two participants were identified as active TB cases by the TAIMA TB team and another two cases were identified through contact tracing of those cases by the local TB program. These four active TB cases were identified earlier than under normal program conditions thus breaking the infectious cycle at an earlier point preventing further transmission within the community. Residential areas of high risk for TB were identified accurately using our approach as evidenced by the fact that 82% (14/17) of the active TB cases that occurred in Iqaluit prospectively during the six month door to door campaign occurred within the identified areas. A new blood test for the diagnosis of latent TB infection was shown to be feasible in Iqaluit.

## TB Champion Role

Taima TB is a research project that uses both old and new ideas to try to stop TB in Inuit communities. In order to be successful, it is essential that the project fits the Inuit culture. Therefore your role as a TB Champion, as someone who knows the community, language, and culture well is very important.

As a Taima TB Champion you will be directly involved in the door-to-door awareness and screening campaign, you will be the first contact most people have with the Taima TB project.

You will receive training in TB education and learn how to deliver medication for latent TB infection (LTBI) also known as directly observed prophylactic therapy (DOPT).

You need to be comfortable answering questions about the Taima TB project and about TB in general. If at any time you are unsure of an answer please let the person know you will find out the answer and get back to them. This is the standard way professionals should deal with these situations.

As TB Champions, you will be going to homes to invite persons to be a part of the Taima TB project. Everyone in the household is invited to participate. If they agree, a consent form will need to be signed to allow the nursing staff to look at medical records. You will also make arrangements to come back with the nurse to do TB teaching, hear people's stories about TB, and do testing for TB.

Confidentiality is absolutely essential. Confidentiality is keeping personal information secret. While working with TAIMA TB, Champions must be aware that any information or knowledge they hear or learn about people, their families, situations, or experiences while working with TAIMA TB cannot be shared with others. Even if this information appears to be known socially we cannot reveal it ourselves. This may be a very difficult balance as often you may know people we visit or may know their family members and friends.

To avoid confusion, it is important that the correct and consistent explanations be used when interpreting.

## Confidentiality

As Taima TB staff we have a legal and moral obligation to ensure every client's personal information is kept secret.

Confidentiality is the right of an individual to have identifiable personal and medical information kept private. Our clients need to be sure that their information will not be shared with anyone unless they give specific permission.

All information about a client should be kept private and not shared with anyone who is not involved with the client's care. All records and documents will be kept in the TAIMA TB office in a locked cabinet when not in use. When transporting client records like consent forms, be very careful that they are not accessed (seen, read or taken) by unauthorized people. Do not leave confidential information on an answering machine or as a message on a door.

Realize that there are many other people who work in the building who are not involved in the TAIMA TB project and so we must be very careful that confidential conversations cannot be overheard. Even if the client's name is not said they can often be identified by the information alone. Do not discuss clients or visit-related events on social networking website, on email, GN or personal.

It can be much more challenging to keep information confidential when you work and live in a small community, this does not make it less important. In fact we are held to a much higher standard and need to be even more careful where everyone knows everyone else.

When arranging to meet a client for DOT medication, make sure the client is comfortable with the arrangements and that the client feels the situation is private enough. Ask the client what they have told other people and if they are comfortable with other people knowing about their TB and the medication.

Making sure we maintain confidentiality helps to build strong and trusting client-healthcare relationships.

Personal Information is protected by the Personal Information Protection Act and Health Information Act.

## **Tuberculosis**



- What is TB?
- The TB Bacteria
- Transmission How is it spread?
- Latent/Sleeping TB Infection
- Active TB Disease
- Latent TB Infection vs. Active TB Disease
- Symptoms
- Risk Factors
- Can You Protect Yourself?
- Drug Resistant TB

#### What is Tuberculosis?

Tuberculosis (TB) is a mycobacterium tuberculosis bacterial infection that usually attacks your lungs causing a bad cough. But it can damage other parts of the body as well. Tuberculosis is spread through water droplets that get projected into the air when a person with active TB coughs, sneezes or talks.

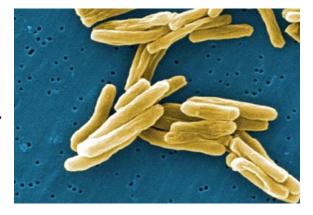
The persons' body can become 'infected' with the TB germ also called bacilli. This infection may progress to active TB disease if the immune system cannot keep the bacilli controlled. Bacilli multiply in great numbers and form a large pool of bacteria that may be spread into the surrounding air when the patient coughs. TB in the lungs (pulmonary TB) is the most common in adults. People with pulmonary TB are able to spread the germ to the lungs of others by coughing, laughing, and sneezing. People with TB disease in other parts of the body than the lungs do not tend to infect others. Also it is very unlikely for people to get TB from children.

#### The Bacteria



- Grow very slowly
- Have a thick membrane or 'shell'
- Both these things make it a hard germ to kill

- The TB germ looks like thin, slightly curved rods under the microscope.
- Can survive in the air for several hours depending on the environment.
- TB germs can't live on surfaces (like tables, utensils, towels, or doorknobs).



#### **How is TB Spread?**

**TB** is spread or "transmitted" through the air. When someone with infectious active TB disease in their lungs coughs, laughs, or sings, tiny droplets containing the TB germ may be released into the air. If another person breathes in these droplets, TB germs may be spread. The sicker the person with TB is the more germs there are that can be spread.

One of 3 things can happen when someone breaths in droplets that have TB germs in them. They may:

- Never become infected with TB
- Become infected with sleeping TB infection (see the next section) but never develop active TB disease
- Become infected and develop active TB disease weeks (not days), months, or years after exposure

TB is NOT spread by sharing dishes, clothes, or by touching.

#### **Latent/Sleeping TB Infection**

Most often when we hear the word **infection**, we think of being sick with something like a throat or chest infection. The language around 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 protect them. Their immune system builds a wall around the TB germ, putting the germ to sleep, and stops the TB germ from growing. The germ is in the lung but is not doing any damage. People with TB infection are not sick, do not have symptoms, and cannot spread TB to other people. Another name for sleeping TB infection is latent TB infection or "LTBI".

If you have latent or 'sleeping' TB you will probably test positive to the tuberculin skin test (TST). You are not contagious if your tuberculosis is latent.

#### **Active TB Disease**

TB infection may progress to TB disease if the immune system cannot keep the bacteria 'asleep'. The body's fighter cells are no longer able to contain the germs. The hard shell surrounding the bacteria breaks down and TB germs escape and multiply. This means the TB germs are awake and causing harm to the body.

In active TB disease, the TB germ has been inhaled into the lungs, is growing, multiplying and is usually making the person sick. It is damaging the person's body. This process can occur anywhere in the body, but usually occurs in the lungs. The TB germ can get into the blood stream and travel to other places; it causes damage to tissues it is growing in. TB can be cured in most people with the use of antibiotics.

Possible places TB disease can be:

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

TB disease can be spread through the air from a person with active TB disease in the lungs, it can result in many people getting sick, it is important that people with active TB disease are found early and given adequate treatment. Without treatment, the germs keep to growing and cause damage to the body. People can die from TB if it is not treated.

#### Latent (Sleeping) TB Infection vs. Active TB Disease

Person with LATENT TB infection.	Person with ACTIVE TB disease.
<ul> <li>Has tuberculosis TB germ (bacteria) in the body, but the TB germs are sleeping or inactive</li> <li>Does not feel sick</li> <li>Is not contagious</li> <li>Has the potential to develop disease if the tuberculosis germ (bacteria) become active and multiply in the body</li> <li>Is treatable – so doesn't turn to active TB disease</li> </ul>	<ul> <li>Has active tuberculosis germ (bacteria) in the body</li> <li>Feels sick and has symptoms such as coughing, fever, night sweats and weight loss</li> <li>Is capable of spreading the disease to others if the germs (bacteria) are active in the lungs or throat</li> <li>Is curable if diagnosed early, if treatment is started quickly, and if the treatment is completed properly.</li> </ul>

#### **Symptoms of TB**

Early symptoms of active TB beyond a chronically bad cough are weight loss, fever, night sweats and loss of appetite.

ADULTS	CHILDREN
In adults, watch for these signs and symptoms:  • Weight Loss • Night Sweats • Loss of appetite • Fever & chills • Bad cough for 3+ weeks • Fatigue	Young children often do not have the obvious symptoms of TB because their immune systems are not mature. Watch for these signs and symptoms:  Cough (with no phlegm) Fever Feeling sick Extreme lack of energy
Coughing up blood	<ul> <li>No appetite</li> <li>Weight loss</li> <li>Noises in the chest when breathing</li> </ul>

#### **Risk Factors**

Things that increase the body's chance of becoming infected with TB:

- Smoking cigarettes
- Not enough rest
- Extreme stress
- Being very young/very old
- Having conditions that weaken the body's ability to fight disease (examples: poorly controlled diabetes, HIV/AIDS, kidney disease, alcoholism, IV drug use, crack and cocaine use, poor nutrition, some types of cancer)

#### **Can You Protect Yourself?**

Finding and treating TB early are very important to eliminating TB from communities. Treating cases of TB as soon as possible can stop the spread of the disease within the community. Community members need to be aware of the symptoms of TB and be aware of what to do if they know someone has symptoms. Giving community members the right information will help prevent TB in their community.

You can also protect yourself by:

- 1. Not smoking
- 2. Eating healthy food like country food, fruits and berries, vegetables (food with less sugar and salt are usually healthier)
- 3. Get enough rest
- 4. Get exercise and fresh air.
- 5. Not drinking alcohol

The GREATEST risk of sleeping TB infection becoming active TB disease is in the first 2 years after being infected

You may not know you have TB – get tested, get treated before you get sick.

#### **Drug Resistant Tuberculosis**

Drug resistant tuberculosis is a type of TB that cannot be killed by the usual TB antibiotics. Drug resistant TB happens when the active TB germ changes itself so that the medications no longer work.

Treatment might fail if:

- the whole dose is not taken
- too many doses are missed

People can also get drug resistant TB by breathing in a germ that is already drug resistant. 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 their medications exactly as prescribed.

Drug resistant TB is unusual in Inuit communities.

#### **BCG Vaccine - Bacille Calmette Guerin**

BCG – which stands for Bacille Calmette Guerin, it is named after the persons who discovered it. BCG is the only vaccine used currently to prevent serious kinds of TB. In the past, BCG was used in all of Canada. As anti-TB drugs became available in Canada, and the number of TB cases went down, the BCG vaccine was no longer given to most Canadians. However, BCG vaccine is still used in Inuit communities; it is given to newborn babies to provide some protection against serious forms of tuberculosis like TB meningitis. BCG does not prevent TB infection and BCG will not stop sleeping TB from becoming active TB in people who have already been infected.

## 5 Key TAIMA TB Facts

- 1. TB is treated here in Nunavut and is curable.
- 2. People who are sick with active TB disease can have chronic cough, weight loss, night sweats or fever.
- 3. You may be able to infect other people if you have active TB disease in your lungs because TB spreads through the air.
- 4. If you are close with someone who has active TB disease, you may become infected with TB germs and develop sleeping TB infection.
- 5. People with sleeping TB infection are not contagious and can be treated with medication in Nunavut to prevent getting sick with active disease.

## Screening

Screening is 'the testing of a person or a group of people for the presence of a disease or other condition.'

Diagnosis of TB is made using medical history, presence of signs and symptoms, physical examination, chest x-ray, and laboratory tests.

#### Why Screen for TB?

Finding and treating TB infection and disease early can decrease the damage done by the germ to the body and reduce the spread of the disease to other people.

General TB screening includes:

- Symptom inquiry
- Tuberculin skin testing (TST)
- IGRA Interferon Gamma Release Assay blood test

To clarify whether the person has latent TB infection or active TB disease further screening may include:

- Sputum samples
- Chest x-ray

There are a number of tools used to screen people for the presence of the TB germ and TB disease. We will discuss each of these.

As part of the TAIMA TB project the first step we will be using is a blood test called the Interferon Gamma Release Assay or IGRA. We will also be using the Tuberculin Skin Test or TST and a 'symptom inquiry'. This can tell us if we need to test further. If we suspect TB infection or disease we will then request a chest x-ray and 3 sputum samples.

#### **Symptom Inquiry**

Asking about symptoms is one of the best ways to know if it's possible that a person might have active TB disease. The 5 symptoms we ask about are: cough for more than 3 weeks, fever, weight loss, tiredness or coughing up blood.

#### **TST - Tuberculin Skin Test**

The tuberculin skin test (TST) is used to see if there are TB germs in the body. Tuberculin skin testing is used to identify sleeping TB infection, not active TB disease.

This test consists of a small amount of a special solution (made from dead TB bacteria) being injected just under the skin on the forearm. The nurse must 'read/see' the test area 48-72 hours later. In people who have been exposed and become infected with the germ, the reaction will cause swelling were the solution was injected and will be seen as an 'induration' or hard bump in the area of the injection site. If a person has this reaction they need to go have a chest x-ray and collect 3 sputum samples for testing to make sure they don't have active TB disease.

#### **IGRA - Interferon Gamma Release Assay**

Interferon Gamma Release Assay (IGRA) is a blood test that can measure a persons' immune system response to the presence of TB germs. The results of the skin test can sometimes be confused by other bacteria that are like TB or by the BCG vaccine. The IGRA blood test is not affected by these things. The IGRA requires only one visit. Unlike the TST people do not need to return 2–3 days later in order to have the test read.

As part of the TAIMA TB study project we will be using the test made by the company Cellestis. The official name of the test is the QuantiFERON-TB Gold In-Tube (QFT) blood test. We will be collecting a small amount of blood in 3 different tubes. We would like to determine if it is possible to use this test in a remote area like the Arctic.

#### **Sputum**

The sputum or 'spit' we collect is looked at under a microscope to see if any TB germs are visible. Next the sputum is sent to a laboratory where a small amount is spread on a jelly-like substance in a dish and kept for 7 weeks to see if any TB germs grow. By collecting sputum on 3 different days it is more likely if there are TB germs in the lungs that we will see some.

We use the term 'Smear positive' when there are so many TB germs in the sputum that they can be seen under the microscope right away. Because there are so many germs, people with smear positive sputum are usually sick and more likely to infect other people.

We use the term 'Culture positive' when there are not enough TB germs in the sputum to be seen under the microscope right away. We have to wait to see if TB germs grow in a dish in the lab. Because there are fewer TB germs in their sputum, people with culture positive TB are usually considered to be less infectious.

#### **Chest X-ray**

Chest x-rays are used to see if the lungs are healthy, if the TB germ is growing in the lungs it often makes 'sores' in the lungs called cavities.

#### SPUTUM COLLECTION

Confirm the collection container is labeled correctly with:
 -your (the patient) first and last name & healthcare number
 -the date and time of collection,

Incorrectly or incompletely labeled specimens will not be tested.

- The ideal time to collect the sample is early in the morning just after getting out of bed. However, sample may be collected at any time sputum is available to be produced.
- Gargle and rinse your mouth with water. Do not use mouthwash or brush teeth with toothpaste immediately before collection.
- 4. Open the container and hold it very close to your mouth.
- 5. Take as deep a breath as you can and cough, deeply from within the chest. Do not spit
- 6. The sample you cough should look thick and be yellow or green in color. A minimum of 15mL (1 tablespoon) of sample is required (should at least fill the bottom surface of the container).
- 7. Close the container lid tightly and give sample to your caregiver right away.
- 8. If you are at home, seal the sample in the zip locked section of the bag and put the lab requisition in the pouch section of the bag.
- 9. Bring the container and lab requisition to the laboratory as soon as possible. If unable to return the sample to the laboratory right away, the sample can be stored in the refrigerator until you have produced all three sputums. Prolonged delays will affect the test results.



















## Latent 'Sleeping' TB Medications

The amount of medication given to children depends on their weight. Because a child's weight can change quickly we need to weigh them regularly. Once a person weighs more than 60 kg the dose is usually the same for everyone.

The medications used to treat sleeping TB are:

#### Isoniazid (INH)

INH is an antibiotic. An adult who weighs 60 kg will be taking 3 large white tablets which is a dose of 900mg. Here in NunavutThe medication must be taken twice weekly for 78 doses; this will be 9 months if no doses are missed.

The most common side effects of INH are:

- Stomach Upset
- Nausea/vomiting
- Tiredness
- Loss of appetite
- Itchiness
- Rash
- Abdominal pain
- Jaundice
- Liver Hepatitis

It is important to monitor patients for side effects regularly:

- Ask about any side effects each time before giving medication, these include: upset stomach, nausea or vomiting, yellow eyes, itchy skin, numbness or tingling, abdominal pain, or pregnancy.
- Check the clients' weight once a month
- Doing blood tests during treatment

Things that can decrease side effects:

- The nurse must be informed of any concerns or symptoms reported by the client
- Taking the vitamin B6
- Try taking medication with food or after a meal
- Side effects may resolve once the client is used to medication

#### Vitamin B6

Vitamin B6 is a vitamin and prevents the numbness or tingling some people experience in their fingers or toes when taking INH.

#### On Going Follow-up

About a month after starting treatment clients will be asked to go to the hospital for blood work. After they have been on latent TB medication for 3 months another chest x-ray is done and 3 sputa are collected to make sure that the TB germ has not started growing. As TB Champions you may be asked to collect the sputum and remind clients to go for blood work and chest x-ray when appropriate, as advised by the nurses.

# Directly Observed Prophylactic Therapy

Treatment of latent TB infection (LTBI) is also called prophylaxis or preventative therapy. Treating TB infection with medication kills the bacteria and reduces the chance that active TB disease will develop in the future. Accepting preventative therapy 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. It is important to let the client know that by taking the preventative treatment, he or she will be protecting his or her family and friends, as well as themselves, from the disease.

As part of the TAIMA TB project the TB Champions will be responsible for delivering TB medication to clients' homes and providing support and education. Directly Observed Prophylactic Therapy (DOPT) means watching clients swallow each dose of anti-TB medication. Having a trained worker watch the client take each dose ensures that the medication is taken properly which reduces the chance of drug resistance.

DOPT has been shown to reduce the risk of drug resistance and to provide better treatment completion rates (Canadian Tuberculosis Standards 6th Edition, 2007). In Nunavut all TB medication is given by DOT method.

DOPT is given twice weekly on Monday and Thursday. If a client misses the first (Monday) dose but gets it on Tuesday instead they can have the second dose on Friday and still get both the doses required. There must be at least a 72 hours between twice weekly doses.

A nurse will dispense the TB medication into individual dose packaging clearly labelled with the clients' name, date of birth and dosage.

Before starting medications, the nurse discusses the medications and any possible side effects or drug interactions with the client. The first dose should be given and observed by the nurse to allow the opportunity for teaching and observation of reactions and side effects. After this first dose the medication can be delivered by TB Champions.

All doses of medication must be observed. Medication should never be left with a client to take on their own at a later time. If the client forgets or chooses not to take the medication the treatment may not work and the person can develop drug resistant tuberculosis. If a client can't take a dose of medication at the time of a visit, the TB Champion and client should figure out another time to come back. If another time cannot be found, mark the dose as missed. Do not leave TB medication with the client. Ask the client to let the nurse or TB Champion know as soon as possible if they are going to be travelling out of town for medical or other reasons. The nurse may be able to make arrangements for the client to take the medication while they are away.

#### **Advantages of DOPT**

- 1. DOPT often helps clients to successfully complete all of their medication as months can be a long time.
- 2. Staff can watch for side effects of medications and help client deal with the side effects appropriately.
- 3. The client is encouraged and supported to complete required check- ups including blood work, chest x-rays and sputum.
- 4. A trusting relationship often develops between the TB Champion and the client. This relationship:
  - reduces fears about TB and its treatment
  - increases comfort level for client to ask questions
  - improves quality of health care for client
  - workers can be an important link for client to other community resources
  - reduces the possibility of TB germs becoming resistant to the medication

#### Responsibilities of the TB Champion in Regards to DOPT

The TB Champion, under the direction of the nurse, will:

- 1. Visually check TB medications to ensure they are correct to the best of your knowledge.
- 2. Deliver and watch clients take their TB medication. <u>Never leave TB medication for clients to take on</u> their own.
- 3. Monitor client for side effects with each dose of medication.
- 4. Notify the client of follow up required if appropriate (ie blood work, chest x-ray or sputum collection)
- 5. Use incentives and enablers as appropriate.
- 6. Respond to clients in caring compassionate manner.
- 7. Answers client questions and concerns about their treatment within their knowledge. Refer other questions and concerns to TAIMA TB nurse.
- 8. Refer to and discuss with the nurse any client related problems or complaints as they occur.
- 9. Complete charting on the Medication Record after each client visit.

#### **Delivering Directly Observed Prophylactic Therapy**

Set up a place and time to meet the client that works for both the client and the TB Champion. Flexibility with the time and place to meet with the client can be very important. Ensure client confidentiality is maintained. Maintain confidentiality of all client records and personal information at all times.

The DOPT worker watches the client swallow each dose of medication. Medication must never be left with the client. The TB Champion asks whether client is having any side effects.

#### When Delivering Medications;

- Ask about and side effects since last dose.
- Document presence or absence of side effects.
- If side effects are present report them to the nurse & stop medication until advised by nurse.
- If no side effects, give medication and observe dose being swallowed
- Once the dose is swallowed, initial the Medication Record so we know it has been taken.
- Let the client know about any follow up tests they need to do.

Regular communication between TAIMA TB team members is important for the smooth and safe delivery of DOPT. A plan for communication should be set in place. The supervising nurse must be available in person or by telephone to the DOPT worker in case of client side effects or other questions and concerns.

Tell the nurse about all side effects, concerns or questions from the client or about the client as soon as possible.

#### **Administering Medication**

#### The 5 R's:

The nurse is responsible for checking and packaging the medication that the TB Champion will deliver to the client. It is then the responsibility of the TB Champion to ensure they give the right medication to the right client. To help remember we have the '5 R's'

- 1. Right person/client
- 2. Right medication
- 3. Right dose/amount
- 4. Right route (by mouth)
- 5. Right time (ie correct day of the week)

With TAIMA TB we are providing treatment for latent/sleeping TB infection. The DOPT schedule (days we give medication) are Monday and Thursday. If a client misses the dose on Monday, they can take it on Tuesday and have the next dose on Friday. There must be at least 2 days between each dose of medication for it to work properly. Any missed doses are added on at the end of the treatment schedule. If Monday is a holiday (as it often is), medication is given on Tuesday and Friday.

#### **Influencing Adherence to TB-DOPT**

There are many reasons that clients may find it difficult taking DOPT. Sticking with taking meds for 9 months can be very difficult. Here is a list of some of the reasons why clients might have trouble finishing treatment.

- Drug or alcohol abuse or misuse
- Homelessness or housing issues
- Moving around, living in many different places. Not having your own home space.
- HIV
- Mental illness
- Intellectual ability
- Length of treatment
- Thinking it is not necessary for someone to watch them take their pills
- Not understanding TB or it's treatment
- Language barriers
- Cultural differences
- Side effects and concerns related to liver problems
- Difficulty swallowing pills
- Afraid of how they will be treated if those around them find out they have TB
- Treatment is not properly supervised
- Perceptions about staff or clinic
- Interpretation of DOPT as "distrust"

Once barriers are identified, steps can be taken to help get or increase the cooperation of those having trouble with DOPT.

Listed are some ideas that can help the client to stick to their tuberculosis treatment:

- Clients need clear explanation about tuberculosis and what treatment involves.
- Clients need helpful support to change their behaviors.
- Clients should have constant encouragement.
- Helping the client work out some of their social issues (food, access to health care, housing) when possible can help them stay o treatment.
- Planning treatment around the clients' normal daily habits makes treatment more acceptable to them.
- Be creative and flexible, and commit to working together.

#### **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 or get necessary testing done. Many different things can be an incentive (e.g., a food voucher, a friendly smile, cup of coffee, ice cream, etc.). Some people find that getting healthy is a good enough reason 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 and interests can make incentives more effective.

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

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

Incentives and Enablers can be useful in helping to encourage a client to keep taking their TB medication, but they DO NOT replace building a trusting and respectful relationship with the client.

#### **Communication Tips**

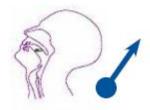
To get a sense of what a client knows, or does not know about tuberculosis and treatment, it is always helpful to enter conversations with "open ended" questions. Open-ended questions allow you to probe and get more information, especially using words "when, how, where, why, what".

#### **Examples:**

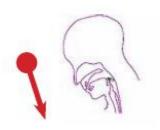
- Tell me what happened to you when you were first told you had tuberculosis. How did you feel? How were you told about it?
- What have you been told about tuberculosis?
- What do you know about the DOPT program?
- How did you get this information?
- What have you been told about your medication?
- What were you told would happen if you missed some of your medications?
- How involved are friends and family in your care and treatment of tuberculosis?
- What was most helpful? Why?
- What can you tell me about your health needs or health beliefs?
- Is there anything that can make it easier for you to take your medication?

## Tips for Swallowing Pills and Capsules

#### Hints for swallowing pills and capsules:



(FIG. 1) TABLETS: Tablets tend to sink so tilt your head BACK to swallow



(FIG. 2) CAPSULES: Capsules tend to float so tilt your head DOWN to swallow

## Tips for Giving Medications to Children and Teenagers

Age	Strategy
Infant	Offer medication when child is hungry Mix medication with age appropriate fluids or foods
Toddlers 1 - 3 years	Use distraction Expect difficulties Be persistent and consistent Give simple explanations Offer incentives if available for each dose
Preschoolers 3 - 5 years	Give simple explanations Allow some negotiation for the method of taking medicine Offer medicine when child is rested Offer lots of praise Offer incentive if available for each dose Be persistent and consistent
School Age 5 - 12	Provide simple explanation Offer tips to swallow pills - (capsules vs tablets - see Figures 1 and 2) Offer praise and incentives
Adolescent 12 - 18	Involve adolescent in decision making Should be able to swallow pills - offer tips (capsules vs tablets- see Figures 1 and 2) Allow flexibility of method of taking pills Offer praise and incentives if available.

## Safety Protocols

As a TB Champion you will often be visiting homes, usually in pairs but sometimes alone and sometimes accompanying the nurse. For these reasons it is important that you be aware of the safety issues and protocols presented in the following sections. Anaphylaxis reaction to the TST or INH is rare but possible; although the nurse will be giving any medications needed it is important for you to understand the way it is dealt with so that you can call the ambulance if needed as well as provide other help needed.

## In Home Safety Protocol

Taima TB staff members should never put themselves in danger. If anyone 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 Taima TB team if you have concerns. Report all incidents to the Taima TB coordinator.

Things to consider in assessing for safety are:

- surroundings for animals
- unpredictable situations (where alcohol or drug use may be happening)
- physical hazards
- weather hazards
- vehicle safety
- 1. Staff working out in the community will have a cell phone with them at all times.
- Keep your keys on your person at all times in case you need to leave in a hurry.
- 3. Wear shoes that are easy to slip on and off so you can get them on easily if needed.
- 4. Go to unknown homes in pairs.
- 5. Assess situation in house as much as possible before entering. If there is only 1 person in the house of the opposite sex do not enter, either stay in doorway and speak or leave and return at another time.
- 6. Follow your 'gut' feeling/instinct. If at any time you feel uncomfortable or unsafe leave. Be respectful but consider your own safety first.
- 7. Get out of the house as soon as possible if unsafe
- 8. Call for help as needed **RCMP at 975-1111** or if needed the

#### Ambulance at 979-4422

- 9. Taima TB has a zero tolerance policy in regards to abusive language, violence or threats. Staff is advised to leave immediately should such behavior occur and report to Taima TB coordinator.
- 10. If staff safety is an ongoing concern in a particular house or situation, the Taima TB coordinator and clinical leader must be made aware as soon as possible. A meeting with appropriate staff will be held and a decision made re continued involvement of client or household in the project.
- 11. A copy of each staff members' scheduled home visits must be at the Taima TB office and if there is variation on this the coordinator must be made aware. This is a safety issue.

## Infection Control Procedures

#### **Hand Hygiene**

- 1. Hand hygiene (keeping your hands clean) is the best way to prevent the spread of infection.
  - Hand Hygiene can be performed using plain soap and water or by using alcohol based antiseptic gels or foams.
  - Regular use of hand lotion is recommended so your skin does not dry out.
- 2. Hand washing
  - Wash hands thoroughly with soap and warm water, massage in all skin surfaces of hands and lower wrists vigorously for at least 20 seconds. Rinse well and dry with paper towel. Turn off taps with paper towels to avoid re-contaminating hands by touching the dirty faucets.
- 3. Alcohol-based hand sanitizers/gels
  - Are recommended for hand hygiene when hands are not visibly dirty. Apply sanitizer and rub over all surfaces of the hands and fingers until dry.

#### Hand Cleaning should be done:

- Before any medical procedure.
- Immediately after removing personal protective equipment, e.g., gloves.
- After contact with blood or body fluids.
- After contact with items likely to be contaminated with blood or body fluids.
- Between home visits.

#### **Gloves**

- 1. Gloves are worn to protect the person wearing them in the following situations:
  - When you will or may have to touch something with blood, body fluids, secretions, mucous membranes or non-intact skin.
  - Handling things or surfaces that may be contaminated with blood, body fluids and/or secretions.
- 2. Gloves are NOT a substitute for hand hygiene.
- 3. Disposable gloves must not be reused or washed.
- 4. Gloves are not needed for care in which contact is limited to a client's skin as long as there are no cuts or scratches.
- 5. Remove gloves right after a procedure is completed.
- 6. Hands should be cleaned immediately after removing gloves.

#### **Waste Disposal**

- 1. Garbage generated at visit will be disposed of in a brown paper bag and be returned for disposal at the Public Health Unit.
- 2. Place sharps directly into an approved sharps container as soon as possible after use without recapping or removing them.

#### **Respiratory Measures**

- 1. All persons should cover their mouth and nose when they cough or sneeze (or to cough/sneeze into their sleeve). If using a tissue they should then put the used tissues into a wastebasket and clean their hands.
- 2. Any person who is symptomatic and being sent to QGH for investigation for possible active TB should be given a mask to wear while they are on their way to the hospital.

# Needle Stick Injury/Exposure to Blood Bourne Pathogen Protocol

This Needle Stick Injury Protocol is designed to cover any blood or body fluid exposure which occurs in the community setting while working with Taima TB.

Prevention of occupational exposures to blood/body fluids is of utmost importance.

As per the Qikiqtani General Hospital Infection Control Manual revised 01/11/2008 Section 5. 'A <u>significant exposure</u> is defined as an injury during which one person's blood or other high risk body fluid comes in contact with another person's body cavity; subcutaneous tissue; or non-intact, chapped or abraded skin or mucous membrane.'

'Injuries of concern included needle stick injuries, injuries from other sharp items, splashes and bites. Any needle that has been used to immunize or inject any substance into a person is considered contaminated, whether blood is visible or not.'

#### Inform the Taima TB coordinator of the exposure as soon as possible.

The coordinator will ensure that the exposed employee complete the Worker's Safety & Compensation Commission form and Incident Report Form after being attended to in the Emergency Department.

This procedure adapted from the QGH Infection Control Manual should be followed in the event of a needle stick injury.

- 1. Provide the following first aid when any exposure occurs:
  - a. Encourage bleeding at the injured site
  - b. Wash area well with soap and warm water
  - c. If splash is to the eyes, wash out the eye area well with cold water.
- 2. Advise client that usual procedure after a significant exposure to blood or body fluids is that both persons have blood drawn to test for Hep B, Hep C and HIV. Let client know that someone from the QGH or Taima TB will be in touch with them.
- 3. Report to QGH Emergency AS SOON AS POSSIBLE.

## Anaphylaxis

Anaphylaxis is a potentially life-threatening allergic reaction. It is a very rare complication of the tuberculin skin test but we need to be prepared and know what to do should it happen. If a client is having an anaphylactic reaction the nurse will ask you to call the ambulance.

**In Iqaluit call the ambulance at 979-4422.** Tell them the house number of where you are and any contact telephone you have. They may also ask you the person's name and how old they are.

The nurse may then give the person an injection of epinephrine to slow down the reaction. If you are comfortable helping, the nurse may ask you to write some things down. These are things like; the time the reaction happened, the time medication was given, etc.

# Reportable Occurrences

All members of the Taima TB team are responsible for reporting to the coordinator any situation they encounter in which a person is in danger or in which threats of violence against self or others are made. If possible ensure that family or friends are aware and person is left in company of a responsible person.

Use professional judgment in deciding the need to report abuse, neglect or self-neglect. Given that the decision to report may not be straightforward, it is recommended that one consult with the TAIMA TB team; a decision will be made by the team. If a person is in imminent danger the appropriate authorities should be notified immediately.

# Appendices

## Dictionary of Terms

**AFB (Acid-fast bacilli):** Microorganisms that are distinguished by their retention of specific stains even after being rinsed with an acid solution. The majority of AFB in patient specimens are mycobacteria, including species other than *Mycobacterium tuberculosis* complex. The relative concentration of AFB per unit area on a slide (the smear grade) is associated with infectiousness. A positive culture is required for laboratory confirmation of *M. tuberculosis* complex.

**Active TB disease:** Current active tuberculosis, the TB germ is growing and multiplying. The germ is causing damage to the tissues around it – generally the lungs but it can be the brain, kidneys, bone, spine, eyes or other parts of the body. It is infectious or contagious. The person usually feels sick.

**Adherence:** A term that is often used interchangeably with compliance and refers to the patient's and health care provider's ability to follow management guidelines appropriately. It most often refers to the strict adherence by the patient to the prescribed regimen of anti-tuberculosis drug treatment or preventive therapy.

**BCG (Bacille Calmetter-Guerin):** A live attenuated vaccine derived from Mycobacterium bovis used to prevent or moderate tuberculosis disease.

**B6 (Pyridoxine):** INH, the medication used to treat LTBI, can interfere with the metabolism of B6 (pyridoxine) and produce peripheral neuropathy and other significant reactions (i.e. psychotic episodes). A dose of 25 mg is sufficient for adults and 15 mg for children under 5 years of age.

**Contact:** A person identified as having come in contact with an active case of TB disease. The degree of contact is usually further defined as close household, close non-household, casual and community contacts. The level and duration of contact usually suggests the risk of becoming infected.

**Culture positive disease:** The isolation of *Mycobacterium tuberculosis* complex from sputum, body secretions, or tissue.

**DOPT (Directly Observed Prophylactic Therapy):** The process whereby a health care worker watches the patient swallow each dose of medication, this helps the staff know how many doses of medication are actually taken and helps clients remember to take their meds.

**Enabler:** A practical item given to a patient to make adherence easier. Ie. a taxi voucher, home delivery of meds.

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

**Incentive:** A gift given to patients to encourage or acknowledge their adherence to treatment. ie. special foods

**Induration:** The soft tissue swelling that is measured when determining the tuberculin skin test (TST) response to purified protein derivative (PPD) tuberculin. It is different from the erythema (redness), which is not measured.

**Infectious:** When a person can transmit infection to others through the production of infectious aerosols (coughing, sneezing, singing). Those with smear-positive cavitary and laryngeal disease are usually the most infectious.

Interferon Gamma Release Assay (IGRA): A blood test that has been developed for the diagnosis of latent tuberculosis infection (LTBI). The test works because blood cells that have been exposed to the TB germ are sensitized to tuberculosis antigens and produce high levels of IFN-y when re-exposed to the same mycobacterial antigens. There are two different types of IGRAs used in Canada. These are the QuantiFERON-TB Gold In-Tube (Cellistis Limited, Carnegie, Victoria, Australia) and the T-SPOT. TB (Oxford Immunotec, Oxford, UK) assays.

**Intradermal:** Means injecting a substance just below the skin between the upper and lower lays of skin. In TB it is used to inject either PPD skin test antigen using the Mantoux technique or vaccinating with BCG vaccine.

**INH (Isoniazid):** Medication used in the treatment of LTBI (Latent tuberculosis infection). A dosage of 20-30 mg/kg to a maximum of 900 mg is given to children and 900 mg per dose for adults.

**LTBI (Latent tuberculosis infection):** The presence of latent or sleeping TB infection with no evidence of clinically active disease. Healthy people can have latent TB infection and not get sick – but if they develop active TB disease they often don't realize it until they are sick and contagious.

Pulmonary tuberculosis: Includes TB of the lungs and airways.

**PPD (Purified Protein Derivative) Tuberculin:** A preparation of purified tuberculin standardized in the past. The usual tuberculin test uses 0.1 ml of PPD standardized to 5 tuberculin units (TU).

**Resistant:** A germ that is difficult or impossible to treat with antibiotics.

**Screening:** A tool used to identify cases of disease 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 a person is sick.

**Sputum Culture:** A sample of sputum is put into a germ friendly environment to see if the 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 diagnose TB.

**Sputum Smear:** A laboratory technique for preparing a specimen so that bacteria can be visualized microscopically. The results for sputum acid-fast bacteria (AFB) smears typically are as numbers of AFB per high-powered microscopy field, or else as a graded result from no AFB to 4+ AFB. The quantity of stained organisms is associated with the degree of infectiousness.

**Symptom:** Anything unusual or different that a client notices about herself or himself that may be a sign of disease or illness, complaint (e.g. sleepiness, loss of appetite, nausea, pain).

**Treatment of LTBI (Latent tuberculosis infection):** The provision of preventive therapy, usually in the form of isoniazid (INH), to individuals infected with *M. tuberculosis* but without active disease. This is also known as chemoprophylaxis.

**TST (Tuberculin Skin Test):** Skin test to identify whether a person has delayed-type hypersensitivity reaction to tuberculin antigens.

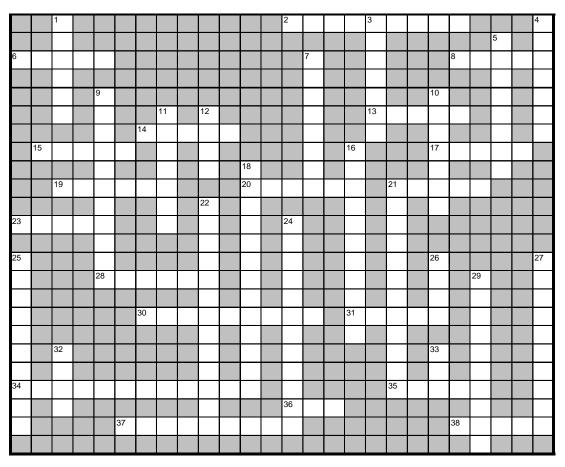
## TB Knowledge Pre & Post Training Test

1.	What is tuberculosis?
2.	Describe how TB is spread.
3.	What test is done to see if someone has been infected with the TB germ?
4.	What does DOPT 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 that are at greater risk for getting TB disease.

<ul> <li>11. List 3 side effects of TB medication.</li> <li>12. What part of the body can be damaged by drinking alcohol while taking TB medication?</li> <li>13. List two barriers that a client may experience that may keep him/her from taking his/her medication regularly.</li> <li>14. List 3 incentive/enablers that could be used to help a client complete his/her treatment.</li> <li>15. List 3 reasons documentation is an important part of client care.</li> <li>16. Under what circumstances would it be appropriate to leave medication with a client?</li> <li>17. Whose role is it to prepare the individual doses of client medications?</li> <li>18. Your friend or cousin asks you what neighbourhood you are screening. What do you do or say?</li> </ul>	10.	What can happen if TB medication is stopped too early or taken irregularly?
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## TB Puzzles

## TB Crossword Puzzle



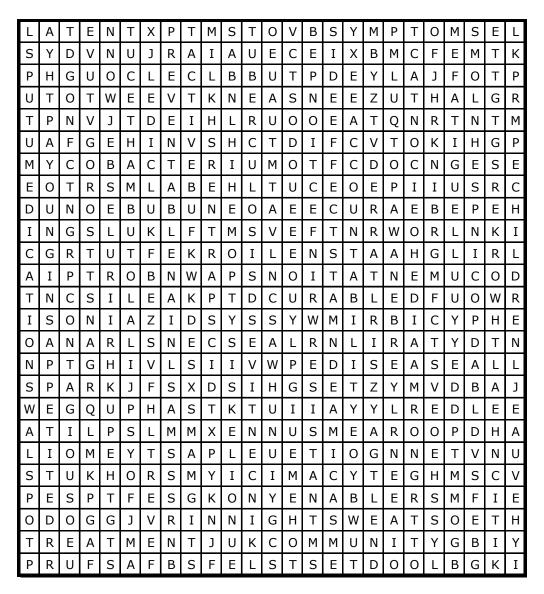
#### Across:

- $2.\,\mathrm{is}$  done to see how meds are affecting the body
- 6. what kind of x-ray is done to screen for TB?
- 8. to teach a person a specific job
- 13. shows TB germs in sputum under a microscope
- 14. specific jobs; r\_\_\_
- 15. liquid INH tastes very
- 17. share information, help someone learn
- 19. pass the TB germ to someone
- 20. rifampin turns body fluids  $\_$
- 21. a sign of TB disease
- 23. most DOT is given \_\_\_ weekly
- 28. sample coughed up from the lungs
- 30. one of the main TB drugs
- 31. most common place for TB disease in the body
- 34. another word for the spread of TB
- 35. may be damaged by drinking alcohol while taking TB medicine
- 36. the best standard for delivery of TB pills
- 37. offered to help clients complete their pills
- 38. this person prepares clients' TB medicine

#### Down:

- 1. TB test is given with a\_\_\_\_
- 3. active form of tuberculosis
- 4. how often should symptom inquiry and weight be done?
- 5. giving medicine to children takes time and \_\_\_\_
- 7. red capsule
- 9. check for \_\_\_ with each dose of medication
- 10. test for TB infection
- 11. watch; keep track of
- 12. a barrier to understanding TB
- 16. good news! TB is curable and —
- 18. essential to good TB care; increases understanding
- 21. private
- 22. charting
- 24. another TB drug
- 25. the blue TB medicine
- 26. checked monthly when on ethambutol
- 27. what is happening when the usual medicines don't work against the TB germ?
- 29. old TB hospital
- 32. picture of the lungs
- 33. the virus associated with AIDS

### Word Search



active
AFB
accountability
appetite
blood tests
children
cough
contact
community
contagious
curable
disease
documentation

elderly
enablers
ethambutol
fatigue
fear
fever
history
health workers
hemoptysis
HIV
incentives
infection

isoniazid
latent
lungs
mantoux
medication
mycobacterium
night sweats
partners
preventable
prophylaxis
rates
rifampin

resistant side effects smear sputum stigma symptoms training treatment trust tuberculosis weight young

# Matching Quiz

Place the number from the right column with the corresponding best description in the left column.

1	When should a TST be read?	germs are asleep in the body
2	latent TB Infection	monitors how the body is handling medication
3	active TB Disease	blue tablet
4	check for side effects	within 48-72 hrs after 'planting'
5	if side effects are noted	germs are active and causing damage to the body
6	liquid INH	large white tablet
7	blood work	curable and preventable
8	isoniazid	confidential
9	client information	blood test to check for exposure to TB germ
<b>10</b>	ethambutol	needs to be refrigerated
11	vitamin B6	should be done with every dose of medicine giver
<b>12</b>	most DOT is given	do not give medication, call nurse
<b>13</b>	tuberculosis	small white tablet
<b>14</b>	IGRA	twice weekly

# Puzzle Answer Keys

## Crossword Puzzle Answers

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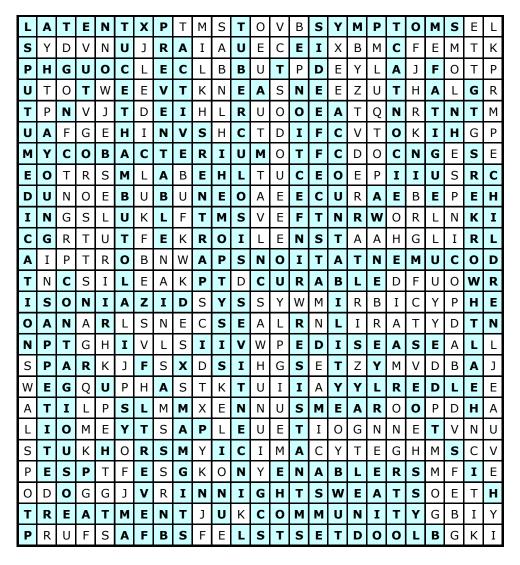
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- 32. picture of the lungs
- 33. the virus associated with AIDS

## Word Search Answers



active
AFB
accountability
appetite
blood tests
children
cough
contact
community
contagious
curable
disease
documentation

elderly
enablers
ethambutol
fatigue
fear
fever
history
health workers
hemoptysis
HIV
incentives
infection

isoniazid
latent
lungs
mantoux
medication
mycobacterium
night sweats
partners
preventable
prophylaxis
rates
rifampin

resistant
side effects
smear
sputum
stigma
symptoms
training
treatment
trust
tuberculosis
weight
young

## Matching Quiz Answers

Place the number from the right column with the corresponding best description in the left column.

- 1 When should a TST be read?
- 2 latent TB Infection
- 3 active TB Disease
- **4** check for side effects
- **5** if side effects are noted
- **6** liquid INH
- 7 blood work
- 8 isoniazid
- **9** client information
- **10** ethambutol
- **11** vitamin B6
- **12** most DOT is given
- 13 tuberculosis
- **14** IGRA

- 2 germs are asleep in the body
- 7 monitors how the body is handling medication
- 10 blue tablet
- within 48-72 hrs after 'planting'
- 3 germs are active and causing damage to the body
- 8 large white tablet
- 13 curable and preventable
- 9 confidential
- 14 blood test to check for exposure to TB germ
- 6 needs to be refrigerated
- 4 should be done with every dose of medicine given
- 5 do not give medication, call nurse
- 11 small white tablet
- 12 twice weekly

### TB Resources

Canadian Tuberculosis standards – 6<sup>th</sup> Edition http://www.phac-aspc.gc.ca/tbpc-latb/pubs/pdf/tbstand07\_e.pdf

First Nations & Inuit Health (FNIH), Health Canada http://www.hc-sc.gc.ca/fniah-spnia/diseases-maladies/tuberculos/index-eng.php

World Health Organization http://www.who.int/tb/en/

Center for Disease Control (USA) <a href="http://www.cdc.gov/tb/">http://www.cdc.gov/tb/</a>

Canadian Lung Association

http://www.lung.ca/diseases-maladies/tuberculosis-tuberculose e.php

BC Center for Disease Control http://www.bccdc.ca/dis-cond/a-z/\_t/Tuberculosis/default.htm

TB Education and Training Network <a href="http://www.findtbresources.org/">http://www.findtbresources.org/</a>

Stop TB Partnership <a href="http://stoptb.org/">http://stoptb.org/</a>

TST Reading Info <a href="http://tstin3d.com/">http://tstin3d.com/</a>