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POLICY STATEMENT
The Southwest Acupuncture College, as a work site that evaluates patients known or suspected of having communicable disease transmitted via the airborne route, has procedures in place to decrease the exposure of patients, clinic observers and interns, and clinic supervisors to these diseases. Procedures to decrease risk to airborne communicable diseases including tuberculosis (TB) are a part of this Tuberculosis Exposure Control Plan (TBECP).

IMPLEMENTATION
This plan has been developed for the identification and isolation of patients known or suspected to have TB. All students and supervisors that work with patients are responsible for knowing and implementing this plan.

ASSIGNMENT OF RESPONSIBILITY
The Clinic Director is responsible for the following:
1. assuring that resources and personnel are available to implement the TB Exposure Control Plan and related programs,
2. documentation of TB Exposure Control educational activities including student and supervisor attendance,
3. maintaining TB testing and screening records,
4. maintaining respiratory protection records.

It is the responsibility of each student or supervisor to know and understand the information in the TBECP and to follow outlined procedures.

The TBECP will be available to students and supervisors at all times on the website and a copy is kept in the office of the Clinic Director.

TUBERCULOSIS

Pathogenesis and Epidemiology of Tuberculosis
Tuberculosis is one of the world’s deadliest diseases:
In 2015, 10.4 Million people around the world became sick with TB. There were 1.8 Million TB related deaths worldwide. TB is a leading killer of people who are HIV infected. 9,557 TB cases (3 cases in 100,000 people) were reported in the U.S. in 2015. This number has remained relatively stable since 2013. The incidence of TB in New Mexico in 2014 was 2.39 per 100,000 and in Colorado is approximately 1.3 per 300,000, much less than the national case rate. Denver had the highest rate in Colorado with 17 new cases reported in 2015 and Boulder County reporting 5 new cases.

Transmission
TB is spread through exposure to the TB bacilli in airborne droplet nuclei produced when an individual with infectious pulmonary or laryngeal TB coughs, sneezes, talks, etc. Droplet nuclei (approximately 1-5 microns in size) are discharged into the environment during respiratory efforts such as sneezing, coughing, speaking, or singing. Infection occurs when a susceptible individual inhales droplet nuclei
containing the TB bacillus. Prolonged close contact to an infectious person may result in infection of contacts. Once in the lung the organisms can be spread throughout the body. Usually in 2-10 weeks after initial infection the immune response of the individual limits further spread of the organism. The primary reservoir for TB is man; however, in rare instances, TB has been found in cattle and primates. Although the TB is an airborne infectious disease, it is not as contagious as other airborne illnesses such as colds, chickenpox or measles.

The incubation period from infection to the time when a TB test shows a positive reaction is usually 4-12 weeks. Overall, approximately 10% of individuals that have positive TB tests may develop active TB over their lifetime. The risk for developing active disease is greater during the first two years after infection.

Theoretically the period of communicability of TB is as long as viable organisms are being discharged in the sputum. Inadequate or poorly treated individuals can remain communicable for years. Factors affecting communicability include the number of organisms released into the environment, the virulence of the organism, and ventilation or concentration of organisms in the environment.

**Signs and Symptoms of Tuberculosis**

Symptoms of TB may include chronic cough, productive cough, bloody sputum, weakness, weight loss, fatigue, loss of appetite, and night sweats. Most TB is located in the lungs and is called pulmonary TB; however, TB infection can occur in other locations in the body.

Persons with immuno-compromising conditions have a greater risk for the progression to active disease after infection. HIV is the strongest known risk factor yet identified for the progression from latent TB infection to active disease.

**Groups with an Increased Prevalence of Tuberculosis**

In 2015 55% of all notified TB patients had a documented HIV test result.

Groups with a higher risk of progression from latent TB infection to active TB disease include persons with certain medical conditions including HIV infection, silicosis, a history of certain abdominal surgeries, and/or abnormal body weight.

**Treatment of Tuberculosis**

Diagnostic measures for identifying TB include history, physical exam, Purified Protein Derivative (PPD) test for TB, chest x-ray, and microscopic examination of sputum and cultures. Other methods such as bronchoscopy and biopsy are also used. TB may be difficult to diagnose in patients with HIV infection or other immuno-compromising conditions. Patients with active TB should be in isolation until sputum and culture results are negative.

A positive TB test (PPD) indicates infection with the TB bacteria but does not in itself mean that an individual has active TB disease. Individuals with a positive PPD that do not have any other signs or symptoms and have a negative chest x-ray are not considered to have TB.
Patients with active TB are given a combination of specific medications for at least 6 months. A combination of medications are given to prevent drug resistance. These medications include: Isoniazid, Rifampin, Pyrazinamide, Ethambutol and Streptomycin. Even with these measures, many cases are becoming MDR TB (multi-drug resistant).

Individuals with latent TB infection (a positive TB test and no signs or symptoms of disease) may be put on preventive medication for six months. Individuals with latent TB infection are not contagious and can continue to work and carry on normal activities.

**Risk Assessment**

We recognize that students and supervisors at the Southwest College are at risk of exposure to airborne diseases, including TB; therefore all students and supervisors are included in a comprehensive TB control program that includes screening, respiratory protection, and education.

Personnel TB skin test (PPD) data will be evaluated during each test period to determine the conversion rate of personnel. The results of this analysis will be used to modify the TBECP as needed.

Data will be analyzed to determine the number of confirmed or suspected cases of TB in the patient population. This information will be used to determine the risk of exposure to students and supervisors.

Areas of employment and study in Southwest College will be classified as low, medium, and high risk. These classifications are outlined as follows:

1. Low risk areas require annual risk assessments and PPD testing of students and supervisors and are defined by the following criteria:
   a. PPD conversion risk in students and supervisors is no greater than in areas without occupational exposure.
   b. There are no clusters of TB test conversions.
   c. There is no evidence of TB transmission.
   d. There are less than 6 TB patients cared for per year.
   e. Areas in which cough inducing procedures are performed on patients who may have TB will follow the intermediate risk guidelines.

2. Immediate risk areas require risk assessments and PPD testing every 6 months and are defined by the following criteria:
   a. PPD conversion rate in students and supervisors is no greater than in areas without occupational exposure.
   b. There are no clusters of TB test conversions.
   c. There is no evidence of TB transmission.
   d. Six or more patients with TB are seen per year.
   e.

3. High risk areas require assessment and PPD testing every 3 months and are defined by the following criteria:
   a. PPD conversion of students and supervisors is higher than that of
groups without occupational risk.
b. Clusters of TB test conversions have occurred.
c. There is evidence of TB transmission.

Areas which identify clusters of TB disease or PPD conversions in students and supervisors should be treated as high risk and be screened every three months until screening data demonstrates a lower risk category.

Facilities that have areas of different risk should follow the specific guidelines for each area. The same protocol does not have to be followed in all areas.

After analysis of patient and employee data, it has been determined that Southwest Acupuncture College is in the low risk category and PPD testing will be repeated every 12 months. The following information was used for this assessment:
1. There were no reported positive cases of TB reported in Southwest Acupuncture College population in the last year.
2. Southwest Acupuncture College meets the low risk criteria outlined above.

**Tuberculosis Screening Program**

**Objective**
The objective of the TB screening program is to offer screening to all students and supervisors for TB infection.

**Screening Program Guidelines**
Guidelines for the TB screening program at Southwest Acupuncture College are as follows:
All students and supervisors will be referred to their primary care physician or the Boulder County Health Department for TB testing. New students and supervisors will be informed that testing is recommended at the time they join the student body or faculty. Testing is recommended at least annually on all students and supervisors. Individuals working in high risk areas may be recommended to be tested more often. Individuals will also be counseled to be tested after exposure to infectious patients or patients with an increased suspicion of TB. Individuals that refuse TB testing will be interviewed for signs and symptoms of TB during the regular scheduled screening. Students or supervisors who refuse TB testing will be required to sign a refusal form. A copy of the refusal form will be put in the individual’s file. Positive TB tests (conversions) must be posted in the OSHA 200 log.

**Test Interpretation**
For a TB test to be positive, an induration or “bump” must be present 48 to 72 hours after the test is administered. The induration or “bump” is measured in millimeters (mm), and the results are recorded quantitatively (e.g., 5 mm or 15 mm or 0). “Positive” or “Negative” should not be used for reporting or recording results. Redness and itching are not positive reactions, only a “bump” or induration denotes a positive test.
All tests must be applied and read by individuals with training in TB interpretation. Even if the test is negative and there is no detectable reaction, it must be read by a qualified individual. Students and supervisors should not read each others tests.

**Tuberculosis Exposure Guidelines**

All individuals who report occupational exposure will be referred to their primary physician to receive counseling regarding TB infection verses TB disease, the risk of developing active disease, the increased risk for immuno-compromised individuals, and the signs and symptoms of TB.

**Tuberculosis Containment in the Clinic Setting**

Containment precautions should be followed by students and supervisors when in the presence of any patient diagnosed with infectious TB or with the following symptoms:

1. Prolonged cough
2. Coughing up blood
3. Night sweats
4. Weakness
5. Weight loss

Containment precautions are as follows:

1. If the patient can tolerate it, the patient should wear a mask.
2. Personnel should wear a respirator mask as recommended in the CDC Guidelines.
3. The patient should be supplied with tissues to cover coughs and a receptacle for the disposal of contaminated tissues.
4. The patient should be isolated from students and supervisors and other patients. The patient should be moved to a private room with ventilation to the outside. The door should be kept closed. Opening a window to the outside will help reduce the volume of droplet nuclei.
5. The number of individuals with patient contact should be kept to a minimum.
6. If patient requires it, the patient should be transferred to a facility with adequate respiratory isolation facilities. Southwest Acupuncture College’s patients in need of hospitalization will be transferred to St. Vincent’s Hospital from our Santa Fe campus, St. Joseph’s Hospital from our Albuquerque campus, and Boulder Community Hospital from our Boulder campus. The infection control practitioner at the receiving facility will be notified prior to the patient’s arrival.
7. Patient appointments should be scheduled in such a way that there is a minimum of exposure to others.
8. The patient should enter the work site through a designated (less used) entrance.
9. The patient should wait in an area that minimizes risk to others.
10. The patient should be given priority to be seen in a way that minimizes risk of exposure to others.
11. If possible, the patient should be evaluated in a setting outside the regular service area.
**Respiratory Protection Program**

The respiratory Protection Program for Southwest Acupuncture College consists of the following components:

1. Evaluation of the student’s or supervisor’s ability to wear respirator mask. Evaluation of student’s and supervisor’s ability to wear a respirator mask may be performed through interview or questionnaire.
2. Fit testing of students and supervisors for use of respirator mask. Fit testing will be performed using irritant smoke, banana oil or other methods recommended by the manufacturer of specific respirators. Fit may be impaired if the student or supervisor has a beard or facial hair.
3. Education related to the use and care of respirator mask.
4. Education informing students and supervisors of high-risk situations in which respiratory protection should be worn.

The intent of this program is to define the rules regarding the use of respirator masks for personal protection against TB. These rules are mandatory and are required by the Occupational Safety and Health Administration (OSHA).

Documentation of the components of the respiratory protection program is maintained by the Clinic Director.

**Respirator Mask Program**

Respirator masks will be issued to at-risk students and supervisors. Southwest Acupuncture College uses the Tecnol PFR 95 style mask. It meets the CDC guidelines for TB exposure control. It provides 95% filtration efficiency of 0.3 micron particles.

Each student or supervisor determined to be at risk will wear an approved, properly fitted respirator mask when performing at risk duties and when in the immediate area (within 10 feet) for an extended period of time (5 minutes) where hazard exists. The following situations are considered hazardous and high risk for the transmission of TB:

- When entering a setting where a TB case or suspected case is housed.
- When entering an area where sputum induction or other high-risk procedure is being performed.

**Tuberculosis Education**

All personnel will receive annual TB education appropriate to their position. This education will include the following:

1. Pathogenesis and Epidemiology of TB
2. Occupational risk of TB transmission
3. Infection control and respiratory protection
4. The difference between TB infection and active disease
5. The increased TB risk for immuno-compromised individuals
6. Information regarding the TB exposure control plan and respiratory protection.

The TB education program will be presented by qualified individuals. Attendance records for TB education will be maintained by the Clinic Director.
Forms

Student Tuberculosis Screening Record

Name: __________________________ Date: __________

Review of TB Symptoms:

1. Productive cough of three weeks or more: Y N
2. Night sweats: Y N
3. Unexplained fatigue: Y N
4. Unexplained weight loss: Y N
5. Fever (often occurs in the afternoon) Y N
6. Exposure: Y N

If yes, please explain: __________________________
______________________________
______________________________

Review of Risk Factors:

Please check any of the following risk factors that you have:

_______ Diabetes mellitus (severe or poorly controlled)
_______ Excessive alcohol intake
_______ HIV Protease
_______ Immunosuppressive therapy
_______ Silicosis
_______ Gastrectomy
_______ History of intravenous drug use

Please note: If you are HIV+ or are taking medications that suppress your immune system, such as Cortisone, or are undergoing cancer treatment, your TB skin test may be inaccurate, and/or you may need more frequent TB screening. You are advised to contact your health care provider for further evaluation.
Tuberculosis Skin Testing Declination Form

Name: _______________________________ Date: ___________

The transmission of tuberculosis (TB) is a recognized risk among patients served by Southwest Acupuncture College students and supervisors. Transmission is most likely to occur from patients with undiagnosed pulmonary TB who are not on effective antituberculosis therapy and are not using adequate infection control procedures.

An effective infection control program requires early detection, isolation and treatment of persons with active TB. Specific actions to reduce the risk of TB transmission include the screening of at-risk students and supervisors. The tuberculin skin test is the only method currently available that is suitable for this purpose.

I understand that due to my potential for exposure to infectious airborne materials, I may be at risk of acquiring TB infection or disease. I have been informed of the opportunity to be screened for TB infection; however, I decline to be tested at this time. I understand that by declining this test, I will continue to be at risk for undetected TB. If in the future I continue to have exposure to infectious airborne materials and I want to receive a TB skin test, I can arrange for such a test.

I have been informed of the risks and consequences of not receiving the TB skin test and have had the opportunity to have my questions answered.

Please initial one of the following:

______ I will seek acquiring the TB skin test through my primary care provider or other community health resource.

______ I have had a TB skin test and the results were negative.

______ I am refusing the TB skin test at this time and have been informed of the risk of exposure to TB in the clinic.

Please sign below:

______________________________________________________________ Date

Signature