

Council of Colleges of Acupuncture and Oriental Medicine



Continuing Education Course Instructions

1. Welcome to the CCAOM's CEU course, entitled "**CNT and Bloodborne Pathogen Review Course**". Everything you need to complete this course and earn 4 PDA points toward the NCCAOM safety CEU course requirement is included in this document (NCCAOM Provider # ACHB 664-001). Completion of this course and assessment should take approximately 4 hours.
2. After you have read following course content and completed the assessment, please send the application form (page 2 of this document), along with payment and the completed assessment, to: CCAOM, 600 Wyndhurst Avenue, Suite 112, Baltimore, MD, 21210. Or, you can fax it to: 410-464-6042. (If you fax the information, please call the CCAOM national office at 410-464-6040 to confirm receipt, as faxes are not always successfully transmitted.)
3. If you have any questions after reading any of the following material, please call the CCAOM national office at 410-464-6040, or email the office at ccaomcnt@comcast.net.
4. Fill out all sections of the application form and sign where indicated. **INCOMPLETE OR ILLEGIBLE APPLICATIONS WILL BE RETURNED.**
5. You must answer all questions on the assessment to receive your certificate. (Please note that at least 8 of the 10 questions must be answered correctly in order to pass the assessment and receive a certificate.)
6. If you do not wish to place your social security number on the application form, you must make sure that you have included your birth date. This information is used as a means of identifying applicants to licensing and/or certification boards such as the NCCAOM.
7. The cost of the CEU course is **\$25**, payable in U.S. dollars to "CCAOM," by personal or certified check, or by Mastercard or Visa. If you are using a credit card for payment, complete the applicable portion of the application form. (Please note that if your check is returned for insufficient funds, you will be charged an additional \$20 fee.)
8. You will receive a certificate of completion within one month after the CCAOM national office receives your application form, payment, and completed assessment. If you do not receive a certificate within one month, call the national office. *Please note that it is important to state your name on the CNT application form exactly as it will be given to licensing boards and the NCCAOM.*

CCAOM CEU COURSE APPLICATION FORM

Send this completed application form, along with payment and completed assessment to:

CCAOM CNT Course
600 Wyndhurst Ave., Suite 112
Baltimore, MD 21210

Or, fax application and assessment with credit card information to: 410-464-6042

(call the office at 410-464-6040 to confirm that your fax was received)

PLEASE TYPE OR PRINT ALL INFORMATION CLEARLY; INCOMPLETE OR ILLEGIBLE APPLICATIONS WILL BE RETURNED

CEU Course Title: Clean Needle Technique and Blood Borne Pathogen Review

Name, as it should appear on your certificate: _____

Social Security Number: _____ or, Date of Birth: _____/_____/_____
(month) (day) (year)

Email Address: _____ Cell Phone: _____

Mailing Address: _____

City: _____ State: _____ Country: _____ Zip Code: _____

Phone (h): _____ Phone (w): _____ Fax: _____

State in which you are licensed to practice acupuncture: _____ License #: _____

How did you find out about this course? _____

Payment Information:

The cost of the CEU course is \$25. Please include either a personal or certified check with this application form, or if paying by credit card, complete the following (we only accept Mastercard or Visa):

Card Number: _____ Exp. Date: _____ 3-digit Sec. Code: _____

Signature: _____ Date: _____

OFFICE USE ONLY

Date Received _____ Amount Received _____ Check Number _____ C.C. Auth. # _____

CNT AND BLOODBORNE PATHOGEN REVIEW COURSE

Introduction

Safety remains the most important consideration for all clinicians, including acupuncturists. Any clinical efficacy is potentially imperiled when a clinician is not cognizant of the potential risks of a clinical procedure to the patient, patient's family, or the clinician. The field of acupuncture and Oriental medicine has flourished in the United States in part because acupuncturists are perceived by members of the public, state regulators, and other providers to be well trained and safe. In this training we will review the basics of clean needle technique (CNT), as well as present new information on bloodborne pathogens and emergency procedures.

CNT is the set of practices employed by acupuncturists to ensure risk reduction in the acupuncture treatment environment. Since its inception CNT has become the national standard for safety in the acupuncture field. Consistency and accuracy in the implementation of CNT has been assured by a nationwide CNT training program. This update is part of that training program.

Risk reduction in the acupuncture treatment environment is based on three premises. First is the understanding that there are hazards present in any clinical environment where sharps are used, including the acupuncture clinic. Sharps, any device designed to be capable of piercing the skin, present a hazard to those in the clinical environment, including clinicians, staff, and patients.

Second, this hazard stems from the potential for injury involving sharps, a risk that is greatly exacerbated by the potential of nosocomial infection when the sharp involved is contaminated by blood or body fluids from a patient infected by an agent transmissible by such blood or fluids. Chief

among these infectious agents are the human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV). Third, the appropriate use of universal precautions greatly reduces the risk of such an infection in the health care environment. In this context the health care environment includes clinics, hospital, and, where home visits are performed, the location of such home visits. In short, the health care environment in the context of acupuncture and Oriental medicine is any location where acupuncture is being performed.

HIV

The human immunodeficiency virus (HIV) is an RNA-containing virus that in infections in humans leads to a constellation of problems extending from declining immune function that leads to an end-stage syndrome in most untreated patients, acquired immune deficiency syndrome (AIDS). These medical problems may be exacerbated by co-infection with other disease-causing agents such as the herpes viruses. HIV continues to be a growing medical challenge worldwide. Mathers and Loncar indicate that over the 25 year period from 2006 to 2030, between 89 million and 117 million people will die of HIV/AIDS.¹ The Centers for Disease Control and Prevention (CDC) report that in 2005, 45,669 cases of AIDS were diagnosed in the United States.²

HIV is not spreading in all populations in the United States equally. The CDC reports that in 2005 African Americans had the highest per capita rate of AIDS, with 75.0 per 100,000 population. Hispanics were second with 26.4 per 100,000 population, followed by American Indians and Alaska Natives, with 10.0, Whites who are not Hispanic with 7.5 and Asians and Pacific Islanders with 4.9 per 100,000 population respectively. The rate for HIV/AIDS was 92.3 per 100,000 population for African Americans, followed by 37.6 for Hispanics, 13.4 for American Indians and Alaska Natives,

10.6 for Whites who are not Hispanic, and 9.2 for Asians and Pacific Islanders, all per 100,000 population.

Currently the largest group of individuals who are HIV seropositive in the United States remains men who have had sex with men, at 45%. Injection drug users make up 24% of those who are infected, followed by 25% with high risk heterosexual contact, and 5% for men who have had sex with men and inject drugs. One percent of those who are infected with HIV are classified as “other,” and includes those infected by clotting factors associated with hemophilia, blood transfusion, perinatal exposure, and risk factors not reported or identified. Compared to HBV, HIV is relatively difficult to transmit, and transmission is limited to exposure to blood or blood products, sexual transmission, perinatal transmission, and through breast milk.

As of 2001 there were 57 documented cases of occupationally-acquired HIV infection among United States health care workers.³ The Centers for Disease Control and Prevention (CDC) indicated in a 2001 report that there were an additional 138 possible HIV exposures in health care workers.⁴ There remains a significant risk of infection in the workplace. In 1996, there were 786,885 percutaneous and mucocutaneous exposures to potentially infectious substances among health care workers in the United States.⁵ The average risk of HIV transmission following an accidental needlestick with blood that is known to be HIV seropositive is approximately 0.3%.⁶ Potentially infectious materials include blood, bloody body fluid, semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, and amniotic fluid. Unfixed tissue samples may also pose a risk.

While it is clear that there are risks from incidents leading to occupational exposure to blood or other materials infected with HIV, it remains unclear what the risk is due to an accidental needlestick accident involving a contaminated acupuncture needle. To date there are no confirmed cases of occupational HIV transmission following an accidental needlestick involving an acupuncture needle in the United States. There was a case report from 2003 of a patient in Thailand indicating that acupuncture was the only known risk for the seroconversion of a previously HIV seronegative 60 year-old female.⁷ Whether or not acupuncture was the cause of the observed HIV infection remains unclear; however, the potential for occupational exposure through an acupuncture needle must remain a concern.

The Centers for Disease Control and Prevention published revised guidelines for the management of occupational exposures to HIV. These responses include talking to the source of the infected material if known, immediate evaluation of the incident, and emergency treatment with antiretroviral medication if warranted by that review.⁴ In the event of occupational exposure through a needlestick accident, the following steps should be taken:

1. The affected area should be washed with soap and water. Where an iodophor is available, the area should be disinfected. There is no evidence that expressing blood from the puncture site reduces the likelihood of seroconversion.
2. The individual involved in the needlestick accident should get to a hospital emergency room as soon as possible. Take any pertinent information such as the serostatus of the source of the contaminated sharp if known. After an investigation, the physician will determine if emergency treatment is warranted. Emergency treatment will consist of a course of antiretroviral medications. The CDC has published a rationale for antiretroviral post-

exposure prophylaxis.⁴ The victim should be treated with an antiretroviral cocktail, ideally within hours of exposure.

3. The victim should be tested for exposure to HIV, hepatitis B virus (HBV), and hepatitis C virus (HCV).
4. Counseling should be made available from someone trained in counseling post- exposure victims.
5. Follow-up testing at three and six months should follow.
6. The patient who constituted the potential source of infection should be contacted and requested to get blood tests at the institution's expense. It is important to note that the patient may not be compelled to undergo testing, and that results from such testing should not constitute a justification for not testing the victim of the needlestick accident.

It is imperative that the victim of the needlestick accident be provided support during such an incident. There is a great deal of anxiety that may result from such an accident. This sense of anxiety may impact not only the victim, but the victim's family. Potential exposure to HIV and infection can be transmitted to a partner through sexual contact. Helping the victim of the possible exposure must include counseling about such issues.

HBV

Hepatitis B is caused by the hepatitis B virus (HBV), a double-stranded DNA-containing virus.

Between 1990 and 2005 the incidence of acute hepatitis B declined 79%. As of 2005, the rate of HBV infection is 1.8 cases per 100,000 population. The most common risk factor is injection drug use.⁸ The rate of acute HBV in the United States between 2000 and 2005 is listed in the table below.

| Year | Rate of HBV/100,000 population |
|-------------|---------------------------------------|
| 2000 | 2.9 |
| 2001 | 2.8 |
| 2002 | 2.8 |
| 2003 | 2.6 |
| 2004 | 2.1 |
| 2005 | 1.8 |

Overall, in 2005 the rate of HBV was higher in males, 2.3 cases per 100,000 population, than for females, 1.4 cases per 100,000 population. The rate of HBV was highest for both males and females in the 20 – 24 years of age group, with the rate being 1.7 per 100,000 population for females and 2.2 per 100,000 population for males. With respect to ethnicity, the incidence was highest among African Americans, 2.9 cases per 100,000 population. Risk factors for infection include sexual contact with someone known to have HBV (10%), multiple sex partners (32%), men who have had sex with men (13%), injection drug use (15%), hemodialysis (0.3%), blood transfusion (0.2%), or occupational exposure (0.8%).

A comprehensive program to eliminate HBV in the United States began in 1991. This program has four parts:

1. Universal vaccination of infants at birth.
2. Prevention of perinatal HBV infection through routine screening of all pregnant women for HBV infection and providing immunoprophylaxis to infants born to infected women or women of unknown serostatus.
3. Routine vaccination of previously unvaccinated children and adolescents.
4. Vaccination of adults at increased risk of infection, including health care workers, dialysis patients, household contacts and sex partners of persons with chronic HBV infection,

recipients of certain blood products, persons with a recent history of multiple sex partners or a sexually-transmitted disease, men who have had sex with men, and injection drug users.⁸

While HBV can be treated, the risk of chronic hepatitis is significant, and prevention remains the most important way to reduce the potential for a negative outcome. In the workplace, the risk of contracting hepatitis B is associated with contact with infected body fluids such as blood. The risk of a health care worker developing hepatitis following exposure to HBV is 22%-31%. The risk of developing serologic evidence of infection is 37%-62%. This risk is significantly higher than the approximately 0.3% cited for HIV above.⁴ In the event of exposure, hepatitis B immune globulin and hepatitis B vaccine have been shown to be effective responses. For the health care worker, multiple doses of hepatitis B immune globulin or hepatitis B vaccine alone is 70%-75% effective. Combining these two treatments increases efficacy. The HBV vaccine is safe and effective.

HCV

HCV is a virus containing a single strand of RNA that is most effectively transmitted by percutaneous contact through injection drug use or exposure to infected blood or blood products. While HCV may be transmitted through sexual contact, contracting a HCV infection through this route is considerably less efficient. Six hundred and seventy-one cases of confirmed acute hepatitis C were reported to the CDC in 2005.⁸ This represents a rate of 0.2 cases per 100,000 population. These authors estimate that approximately 20,000 new cases of HCV infections occurred in, including asymptomatic and unreported infections. Peak rates of HCV occurred in the 1980s, and have declined due to a reduction in infections resulting from injection drug use. While new infections are declining, approximately 3.2 million individuals in the United States are chronically infected as of 2005.

The risk of seroconversion after percutaneous occupational exposure is approximately 1.8% if the source blood is seropositive for HCV. This is considerably higher than the risk of percutaneous occupational exposure due to HIV seropositive blood and lower than the risk of seroconversion after percutaneous occupational exposure to HBV seropositive fluids.⁴ While the risk of occupational exposure leading to HCV seroconversion may be limited to needles with a lumen, it is important to state at this point that as with HIV, exposure following a needlestick involving an acupuncture needle must be treated as a possible source of infection.

No protective antibody response is observed after infection. Anti-HCV immunoglobins are non-protective. There is no effective vaccine for HCV. Interferon may be effective as a treatment but only in established infections, not as a preventative. As with HIV and HBV, it is critical to avoid infection by safe practice methods.

Management of a Needlestick Incident

In the event of an accidental needlestick, the procedure below should be followed. Note that due to the urgency to treat the victim of an accidental needlestick with antiretroviral medication within hours of the incident (should a physician recommend such therapy), this procedure must be followed as expediently as possible:

1. Wash the site of the needlestick with soap and water. There is no evidence that expressing blood from the puncture site has any positive effect, so this is not necessary.
2. Ask the source patient if he or she has a known history of HIV, HBV, and HCV. Note that the patient involved does not have an obligation to answer questions on serostatus.
3. The victim of the needlestick should be transported to an emergency room as soon as possible, and in any case no more than a few hours after the needlestick.

4. The victim should be questioned and examined by an emergency room physician who will draw blood for baseline HIV, HBV, and HCV testing.
5. Should the emergency room physician recommend prophylactic anti-HIV antiretroviral therapy, this should commence as soon as possible on the day of the needlestick incident.
6. In the event the source patient does not know his or her serostatus with respect to HIV, HBV, or HCV, request that the patient undergo testing to determine serostatus. Note that the patient has no obligation to undergo testing, and may refuse testing.
7. The victim of the needlestick exposure should undergo counseling with a professional trained in post-exposure counseling.
8. Follow-up testing for HIV, HBV, and HCV should be done at 3 and 6 months post-exposure.

CNT

Clean Needle Technique (CNT) is the standard by which acupuncturists prevent occupational exposure to bloodborne pathogens through an accidental needlestick incident. CNT consists of the following components:

1. Hand washing
2. Use of the clean field
3. Isolation of contaminated sharps
4. Universal precautions
5. Appropriate emergency procedures in the event of a needlestick incident or some other clinical accident in the course of an acupuncture treatment environment.

It should be stated at the outset that a more comprehensive risk management protocol is beyond the

scope of this course. Any risk management course should be adapted to the unique requirements of the acupuncture treatment environment.

Clean needle technique must be distinguished from sterile technique. Sterile or aseptic technique, which is used in surgical procedures and many laboratory procedures, involves manipulations that are kept sterile by the appropriate use of gloves, sterile supplies, and the maintenance of a sterile field. While acupuncture involves the use of sterile acupuncture needles that must be maintained in a sterile condition during the acupuncture procedure, CNT is a clean rather than sterile procedure. The insertion site is clean, rather than sterile. Hands are in a clean condition rather than covered with sterile gloves. Gloves do not need to be worn except under specific conditions where exposure of the practitioner to blood or other potentially infected body fluids is possible. Gloves are worn:

1. When bleeding occurs
2. When needling in the genital region or in the mouth
3. While palpating near an area where there are lesions on the patient's skin
4. In the event that there are lesions on the acupuncturist's hands

Hand washing is a critical component of the CNT protocol. Hand washing should be done between patients, before and after performing acupuncture or other clean clinical procedure such as seven-star hammer treatments. Ideally, hand washing is done with soap and running water, by thoroughly washing the hands and rinsing them in running water. The provider's hands are then dried with disposable paper toweling that is then discarded. In the event that hand washing facilities are not available, an alcohol-based hand cleaning preparation may be used.

Another critical component of CNT is the isolation of used sharps. Sharps should be isolated in a sharps container specifically designed for this use. Appropriate containers are available commercially. Sharps containers are made of a material impervious to needles and fluids, such as plastic, and are designed to receive contaminated sharps without being able to retrieve them after the sharps are placed in the container. These containers are labeled as to contents and bear the biohazard symbol.

The basics of CNT are outlined below:

1. The provider washes her or his hands with soap and running water, drying them with paper toweling.
2. A clean field is set up near the treatment table. The clean field may consist of a piece of paper toweling or a clean field purchased for this purpose.
3. Needles are placed on the center of the clean field.
4. Non-sterile cotton balls and swabs are placed on the periphery of the clean field.
5. Sharps and trash containers are placed away from the clean field.
6. The practitioner's hands are then rewashed or cleaned with the appropriate hand cleaning agent.
7. Once the hands of the practitioner are rewashed, the acupuncture points should be swabbed in one direction or in a radial pattern. Avoid swabbing in a back and fourth motion. The insertion point can then be palpated with the washed finger.
8. The needle should be inserted without touching its sterile shaft. Should the needle be long, such as a three or six inch needle, the shaft may be held with sterile gauze between the fingers and the needle shaft. Insert the needle only once. In the event that the needle location

is changed, the needle should be withdrawn and placed in the sharps container. A new needle must be used for each insertion.

9. The needle is then stimulated for therapeutic effect.
10. After the appropriate amount of time, the needle should be withdrawn and placed in a sharps container. Do not place the needle in a tray for later transfer to the sharps container as this increases the risk of an accidental needlestick. Do not hand the used needle to an assistant. This transfer also increases the risk of exposure by accidental needlestick.
11. At the end of the treatment, the practitioner washes her or his hands and cleans up the clean field, including replacing or disposing of unused supplies.

Universal precautions are outlined by the Centers for Disease Control.^{9, 10} Universal precautions are widely used to prevent exposure to potentially infectious materials in the course of clinical work, including acupuncture. These precautions are summarized below:

1. Assume all patients are a potential source of infection.
2. Correct and frequent hand washing.
3. Appropriate use of personal protective equipment such as gloves and masks.
4. Use of appropriate engineering controls, such as properly equipped hand washing stations.
5. Isolation of sharps in appropriate sharps containers.
6. Isolation of contaminated medical waste in a red bag or other appropriate container.
7. Correct use of disinfectants.
8. Appropriate caution when handling sharps, including acupuncture needles, seven-star hammers, and lancets.

Tuberculosis

Tuberculosis (TB) is caused by the bacterium *Mycobacterium tuberculosis*. This organism is an acid-fast bacterium with a waxy coat, is transmitted through the air, and has a long incubation period of up to 12 weeks.¹¹ While TB declined in the United States between 2005 and 2006, it remains a significant source of risk in the health care environment. Jensen *et al*¹¹ list the following populations who are especially at risk for TB:

- Foreign-born persons, including children, especially those who have arrived in the United States within 5 years after moving from geographic areas with a high incidence of TB disease (e.g., Africa, Asia, Eastern Europe, Latin America, and Russia) or who frequently travel to countries with a high prevalence of TB disease.
- Residents and employees of congregate settings that are high risk (e.g., correctional facilities, long-term-care facilities [LTCFs], and homeless shelters).
- Health care workers (HCWs) who serve patients who are at high risk.
- HCWs with unprotected exposure to a patient with TB disease before the identification of TB and institution of correct airborne precautions for this patient.
- Certain populations who are medically underserved and who have low income, as defined locally.
- Populations at high risk who are defined locally as having an increased incidence of TB disease.
- Infants, children, and adolescents exposed to adults in high-risk categories.

Persons who are infected are more likely to progress to active disease if they were infected within the previous two years, are HIV seropositive or in some other way immunocompromised, an infant or child less than four years of age, have one of several disorders such as silicosis or diabetes mellitus, or have a history of improperly treated TB.

In 2006, 13,767 cases of tuberculosis were reported in the United States.¹² The presence of HIV contributes to the TB infection rate, possibly by reducing immunity and therefore resistance to HIV

infection. Another factor that increases the potential for harm from TB is the presence of strains of TB that are resistant to multiple antitubercular antibiotics. In 2005, the last year for which there is data, there were 124 cases of TB caused by strains of *Mycobacterium tuberculosis* that are resistant to multiple antitubercular antibiotics.

While most strains of *M. tuberculosis* can be treated by antitubercular antibiotics, the treatment takes nine months to complete, and in the event the strain of *M. tuberculosis* involved is drug resistant, treatment may be difficult and take longer. As with the virally mediated diseases discussed previously, TB is most effectively managed by preventing infection. Preventing the transmission of TB is done by the following:

1. You should have an annual skin test for TB. This test should be repeated after two weeks if your previous test was not within one year. An alternative test, the QuantiFERON blood test is now approved for TB testing. This test has the advantage that only one contact is required, results are available more rapidly, and is not impacted by prior BCG (bacilli Calmette-Guerin) vaccination.
2. Individuals who were vaccinated for TB or have a history of a positive skin test should get a chest x-ray and an annual physical examination.
3. If a patient presents in your clinic with a chronic cough of unknown origin, the patient should be asked to wear a mask. It is a good policy to have masks available for any patient with a cough of unknown origin to prevent transmission of airborne pathogens, including TB.
4. If you suspect your patient may have TB, the patient must be referred to a physician for diagnosis and treatment.

Ultimately the most important component in a clinical safety program is safe practice on the part of the practitioner. The safe use of sharps, prevention of transmission of bloodborne pathogens, and other appropriate risk management techniques prevent harm to the practitioner, her or his family members, and the public. An adverse event, such as a needlestick incident leading to infection, results in harm to one's health, potentially financial harm due to loss of work, or a lawsuit if a coworker or patient is harmed, and administrative sanction by a licensing board. Safe practice remains the most important obligation for the acupuncturist. Clean needle technique is a vital part of safe practice for the acupuncturist.

References

1. Mathers, D.; Loncar, D., Projections of global mortality and burden of disease from 2992 to 2030. *PLoS Med* **2006**, 3, (11), e442.
2. CDCP, HIV/AIDS Surveillance Report, 2005. **2006**, 17.
3. Calfee, D., Prevention and management of occupational exposures to Human Immunodeficiency Virus (HIV). *The Mount Sinai Journal of Medicine* **2001**, 73, (6), 852-856.
4. Hughes, J.; Gerberding, J.; Margolis, H.; Jaffee, H.; Gayle, H.; Janssen, R.; Rest, K.; Hull, R. *Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV and HIV and Recommendations for Postexposure Prophylaxis*; U.S. Department of Health and Human Services Centers for Disease Control and Prevention (CDC): Atlanta, 2001.
5. International Health Care Worker Safety Center. Annual number of occupational percutaneous injuries and mucocutaneous exposures to blood or potentially infective biological substances. <http://www.healthsystem.virginia.edu/internet/epinet/estimates.cfm>
6. Bell, D., Occupational risk of human immunodeficiency virus infection in health care workers: an overview. *American Journal of Medicine* **1997**, 102, (5B), 9-15.
7. Wiwanitkit, V., HIV infection after Chinese traditional acupuncture treatment. *Complementary Therapy in Medicine* **2003**, 203, 273.
8. Wasley, A.; Miller, J.; Finelli, L., Surveillance for Acute Viral Hepatitis - United States, 2005. *Morbidity and Mortality Weekly Report* **2007**, 56 (SS030, 1-24).
9. Universal Precautions for Prevention of Transmission of HIV and Other Bloodborne Infections. In Center for Disease Control and Prevention: 1997.
10. Perspectives in Disease Prevention and Health Promotion Update: Universal Precautions for Prevention of Transmission of Human Immunodeficiency Virus, Hepatitis B Virus and Other Bloodborne Pathogens in Health-Care Settings. In Center for Disease Control and Prevention: 1988; Vol. 37, pp 377-788.
11. Jensen, P.; Lambert, L.; Iademarco, M.; Ridzon, R., Guidelines for Preventing The Transmission of Mycobacterium tuberculosis in the Health-Care Setting, 2005. *Morbidity and Mortality Weekly Report* **2005**, 54, (RR17), 1-141.

12. Trends in Tuberculosis Incidence - United States, 2006. *Morbidity and Mortality Weekly Report* **2007**, 56, (11), 245-250.

COUNCIL OF COLLEGES OF ACUPUNCTURE AND ORIENTAL MEDICINE

CNT AND BLOODBORNE PATHOGEN REVIEW COURSE

ASSESSMENT

Name: _____

Date: _____

PDA Points: 4

NCCAOM Provider #: ACHB-664

Course #: 001

1. In the course of providing acupuncture services, you are stuck with a needle that has been exposed to the blood of a patient. Based on the etiologies covered in this course, which of the etiologies below is most likely to result in seroconversion?
 - a. A hepatitis virus containing double stranded DNA
 - b. A hepatitis virus containing single stranded RNA
 - c. A non-hepatitis virus containing single stranded RNA
 - d. A non-hepatitis virus containing single stranded DNA

2. In order to protect a provider from an occupational needlestick exposure, the provider may be vaccinated against which of the following agents?
 - a. Hepatitis C virus
 - b. Hepatitis B virus
 - c. Human immunodeficiency virus
 - d. *Mycobacterium tuberculosis*

3. In the event of a needlestick accident, how long should the victim wait until being evaluated by an emergency medical provider?
 - a. The same day as the exposure
 - b. Within one week of exposure
 - c. Within two weeks of exposure
 - d. Within three weeks of exposure

4. How frequently should you be tested for tuberculosis?
 - a. Every 6 months
 - b. Every 12 months
 - c. Every 18 months
 - d. Only after exposure

5. A colleague comes to you and mentions that he/she recently had a positive skin test for tuberculosis. Which of the below would be an appropriate follow-up assessment for this individual?
 - a. Chest x-ray
 - b. Complete blood chemistry
 - c. A MRI
 - d. None of the above is an appropriate follow-up assessment

6. Based on the data presented in this course, which of the below groups has the lowest HIV infection rate?
 - a. Hispanics
 - b. Asian
 - c. African Americans
 - d. Indigenous Alaskans

7. When should gloves be worn during CNT?
 - a. When handling sharps
 - b. When palpating areas of the body that have been previously swabbed
 - c. When blood is present
 - d. Gloves should be worn at all of the above times

8. Based on the data presented in this course, the highest HBV infection rate occurred during which of the following years?
 - a. 2000
 - b. 2001
 - c. 2002
 - d. 2003

9. Which of the below statements regarding risk reduction is true?
 - a. Universal precautions should only be used when it is known that bloodborne pathogens are present
 - b. Only acupuncture needles present a hazard in the acupuncture treatment environment
 - c. All clinic environments include the risk of occupational injury
 - d. It is possible to remove all risk from a safe clinical environment

10. Which of the below represents the probability of seroconversion from the human immunodeficiency virus following a needlestick?
 - a. 31%
 - b. 1.8%
 - c. 0.3%
 - d. 0.03%