

*Kingdom of Bahrain  
Ministry of Health  
Public Health Directorate  
Diseases Control Section*



***POLICY FOR IMMUNIZATION AND  
INFECTIOUS DISEASES SCREENING FOR  
MEDICAL, DENTAL, NURSING, AND  
PHYSIOTHERAPY  
STUDENTS***

***2010***

***POLICY FOR IMMUNIZATION AND INFECTIOUS DISEASES SCREENING FOR MEDICAL, DENTAL, NURSING, AND PHYSIOTHERAPY STUDENTS***

***Definitions***

Wherever used in this policy, the following terms shall be construed as follows:

- 1- ***“Section”*** means the Diseases Control Section.
- 2- ***“Student”*** means *medical, dental, nursing, and physiotherapy students*
- 3- ***“Direct patient contact”*** means any routinely anticipated face-to-face interaction with patients in a health care facility.
- 4- ***“Blood borne pathogens”*** means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV).
- 5- ***“Exposure-prone procedures”*** means procedures during which transmission of HBV, HCV or HIV from a Health Care Worker (HCW) to a patient is most likely to occur and includes the following:
  - Digital palpation of a needle tip in a body cavity (a hollow space within the body or one of its organs) or the simultaneous presence of the HCW's fingers and a needle or other sharp instrument or object in a blind or highly confined anatomic site, e.g. during major abdominal, cardiothoracic, vaginal and/or orthopedic operations, or
  - Repair of major traumatic injuries, or
  - Major cutting, or removal of any oral or perioral tissue, including tooth structures during which blood from an injured HCW may be exposed to the patient's open tissues.
- 6- ***“Health care facility”*** means any institutional health service provider, facility or institution, place, building, agency, or portion thereof, whether a partnership or corporation, whether public or private, whether organized for profit or not, used, operated, or engaged in providing health care services.
- 7- ***“Health Care Worker (HCW)”*** means any person who has or may have direct contact with a patient in a health care facility. This may include, but not be limited to, a physician, dentist, nurse, optometrist, podiatrist, physical therapist, social worker, pharmacist, laboratory workers, psychologist, student, on-site faculty, receptionist, dietary staff, housekeeping staff, security personnel, and any officer, employee or agent of that provider acting in the course and scope of his or her employment or agency related to or supportive of health services. *“Health Care Worker”* shall also mean other staff, such as volunteers, who are involved in direct patient contact.

## **Standard Operating Procedures:**

### **A. Immunization program**

- All students must participate in the immunization program.
- All students must complete the consent form for immunization and hand it to the appropriate program personnel together with the student application form.
- All students must complete the required immunizations before joining the College.

### **B. Testing for infectious diseases:**

- Students must arrange for themselves to be tested for infection with HIV, hepatitis B, hepatitis C and tuberculosis in their country of their residence.
- Students who conduct the tests outside Bahrain will have to repeat these upon arrival in Bahrain.
- Tuberculosis screening will include a two-step Tuberculin Skin Test (TST) (Annex 1) and chest x-ray.
- These tests should also be repeated before joining the clinical course.
- A student with negative tests should be counseled regarding avoiding risk factors for contracting blood born infections and tuberculosis.
- If a positive result is received, a student will not be eligible to join the course. A non-Bahraini student will be repatriated.
- The College should notify the Diseases Control Section about the test results for all students immediately.

### **C. For the management of a student who is infected with a blood born infection and T.B. and joined the College before 2010:**

- Follow Annex 2.
- The enrolment with the College should be discontinued for all HIV positive students joining before 2010.
- Students who joined the College before 2010 and present positive results should be referred to the Medical Commission to be interviewed by the expert panel.
- Should the expert panel decide that a student will be allowed to continue, he/she must strictly follow the steps of the Student's Responsibility, below.

### **D. Student's Responsibility**

1. Students have a responsibility to "first do no harm"
2. Students must learn and practice standard and additional infection control precautions. This applies to all patients regardless of their diagnoses.
3. Students have a responsibility to ensure that they are protected from infection with the vaccine-preventable diseases associated with health care.
4. Students have a responsibility to take measures to prevent transmission of acute infectious diseases from themselves to others.

5. Students have a responsibility to know their infectious status for hepatitis B and hepatitis C. This involves the testing of students before commencing studies and periodic testing, as long as the risk of exposure to these viruses (through occupation or other activities) continues.
6. Students should seek post-exposure follow-up if exposed to an infected patient's blood.
7. Students must report an event of patient exposure to a student's blood so that both student and patient can be tested. The source of exposure will not be revealed to the patient.
8. Students must undergo testing for blood borne pathogens as requested by the hospital, if implicated in patient infections.
9. Students will provide the College with a signed declaration that they have:
  - a. received this document,
  - b. read and understood this document,
  - c. agree to comply with the policies and requirements set out in this document,
  - d. been tested for HIV, hepatitis B, hepatitis C and tuberculosis, and
  - e. understood the importance of ongoing periodic testing.

## ***Introduction***

As students prepare to embark on a health care training program it is important that they understand the risks of infection that may occur between health care workers and their patients or contacts.

These risks cannot be totally eliminated, but it is essential to take all possible steps to minimize them. The Diseases Control Section at the Ministry of Health has recommended reasonable measures to minimize these risks. The medical school should provide this document to ensure that their students consider these important issues before they commence their course.

Infectious diseases affect health care workers (HCW) and students during their training and in their professional lives in three ways:

1. The HCW may transfer infectious agents (bacteria, viruses, parasites) from patient to patient.
2. The HCW may become infected with infectious agents acquired from patients.
3. The HCW who is ill, incubating or carrying infectious agents, may infect patients or other HCWs.

## ***Strategies to Minimize These Infectious Disease Risks***

Early in their studies, students should be taught infection control strategies known as “standard and additional precautions”. These include assessing the risk posed by persons with particular infections and clinical syndromes, hand washing, aseptic technique, disposal of sharps and clinical waste, use of single-use only equipments, aspects of sterilization and disinfection of re-useable equipment, the use of personal protective equipments (such as gloves, gowns, masks and eye protection), and managing patients in various forms of isolation. Exemplary performance of these precautions is a key professional skill.

Vaccination provides protection against the infectious hazards of health care settings. Students must be vaccinated according to the immunization policy of the Ministry of Health. A student can only opt out of the immunization program with the prior written approval of the Dean. The medical school provides a program in which students may be tested for immunity to various infectious diseases, and offered vaccines to protect them in health care settings.

The program (described below) is confidential between the student and the program’s medical providers.

## ***Students and Blood-Borne Virus Infections***

Certain blood-borne viruses such as human immunodeficiency virus (HIV), hepatitis B virus and hepatitis C virus are of particular importance in health care settings.

Following infection with these viruses, individuals may carry the virus in their blood and remain infectious for many years, even life-long. Many people infected with these viruses feel completely well and are unaware of their infection. HCWs may be involved in the transmission of these viruses in each of the three ways described in the introduction and it should be noted that :

1. Transfer of blood-borne viruses from one patient to another is very rare in Bahrain.
2. HCWs have rarely been infected by blood-borne viruses. Good infection control practice reduces this risk. Adequate hepatitis B vaccination virtually eliminates the risk of significant hepatitis B infection. HCWs who suffer an injury contaminated with the body fluids of a patient require immediate on-site assessment of any risk of HIV, hepatitis B or hepatitis C infection. Treatment may be indicated to reduce the risk of infection.
3. Transmission of a blood-borne virus from an infected HCW to one or more patients is very rare. However, the risk of a blood-borne virus infected HCW causing serious harm to patients is an important public and professional concern. All potential students of health care sciences must personally consider this issue before embarking on their training, and throughout their career.

The risk of transmitting a blood-borne virus from an infectious HCW to a patient (or an infectious patient to a HCW) depends on several factors, including the particular virus, and the degree of infectiousness (the concentration of virus in the blood). The procedure being performed by the HCW is another very important consideration. In particular, exposure-prone medical or dental procedures pose a risk for direct contact between the skin (usually finger or thumb) of the HCW and sharp surgical instruments, needles, or sharp tissues (broken bone or teeth) in poorly seen or confined body sites (including the mouth) of the patient.

In our society, the responsibility for minimizing this risk to patients falls largely on the HCWs themselves. Measures to protect both patients and HCWs from infections in health care settings should be compatible with existing protection available to citizens. Measures must also consider the training and expertise of HCWs in addressing the risk of transmission of blood-borne viruses to or from HCWs.

### ***The Students Immunization Program***

Bahrain has provided students with an extensive and confidential immunization program. Students must participate in this program, which provides a service and documentation that meets the recommendations of the Infectious Diseases Policies and Programs for Medical Students in Bahrain. A student can only opt out of the immunization program with the prior written approval of the Dean.

The Students' Immunization Program offers the following tests, immunizations and services:

- Immunization (typically a booster dose) for any of the diseases covered in the extended EPI program in Bahrain.
- A primary course of hepatitis B vaccination (for those not previously vaccinated) followed by a test to confirm immunity after vaccination.
- Tuberculosis screening by tuberculin skin testing in the first year. Further screening may be offered during the clinical years of the course. BCG vaccine is *not* recommended.
- Follow-up, and (if indicated) referral for specialist advice, for students who fail to respond to hepatitis B vaccination, or have unexplained positive tuberculin skin tests.
- A confidential personal report of tests and immunizations.
- Expert confidential advice on vaccination matters.
- The attached consent form must be signed by the student and handed over to the appropriate program personnel at the time of first attendance at the immunization program.

### ***Screening and Vaccination Guidelines***

#### **A) Hepatitis B**

Students will be screened for Hepatitis B surface antigen (HBsAg). If the result of the (HBsAg) test is positive, the student will not be eligible to join the medical school, and non Bahrainis should be repatriated.

Students who joined the medical school before 2010 with a positive (HBsAg) result should be referred to the Medical Commission to be interviewed by the expert panel.

The vaccination for Hepatitis B consists of a series of 3 doses. The second dose should be administered one month after the first dose, and the third should be administered 6 months after the first one. Testing for the surface antibody to Hepatitis B (anti-HBs) should be done at least one month after the vaccine series is completed. Medical school applicants who have not been previously vaccinated for Hepatitis B should begin this vaccination process no later than the February 1st prior to possible registration.

Students who have been vaccinated for Hepatitis B must provide the vaccination dates on the Communicable Disease Screening form and the results of their surface antibody level (anti-HBs) for Hepatitis B.

An HBsAg test is required before joining the medical school. If a student is HBsAg negative, three doses of vaccine should be given and the Anti HBs should be carried out within 6 months after completing the third dose, preferably after one month. If the antibodies to the Hepatitis B surface antigen test are **negative**, the student must begin a

second Hepatitis B vaccine series and repeat the Hepatitis B surface antibody test (anti-HBs).

If a student continues to be non-immune after a second series of Hepatitis B vaccine, he/she will be considered to be a “non-responder” and will be referred to the appropriate specialist, and receive career counseling.

## **B) HIV and Hepatitis C**

If the result of any Hepatitis C or HIV test is positive, the student will not be eligible to join the medical school, and any non Bahraini should be repatriated.

Students who joined the medical school before 2010 with a positive (HCV) result should be referred to the Medical Commission to be interviewed by the expert panel.

Student who joined medical school before 2010 with positive (HIV) will be not eligible to continue training.

## **C) Tuberculosis**

Previous positive Tuberculin Skin Test (TST): If the student has a documented history of a previous positive TST (induration measuring equal to or greater than 10 mm), a repeat TST is not required and the student will proceed instead to have a chest x-ray.

- All other students are required to provide documentation of a 2-step TST upon entry to medical school.
- If a previous 2-step TST has been documented within the past 12 months, students are only required to provide documentation of a single step TST.
- A single step TST is required annually, beginning in the second year and for the duration of the course.
- If the results of either the initial 2-step TST or single step TST are positive (due to BCG vaccine or any other cause) the student must supply the results of a chest x-ray. If this x-ray suggestive of T.B, the student will be referred for counseling and for appropriate medical assessment and treatment. Non Bahrainis should be repatriated.

## **D) Influenza**

Each student is required to obtain an annual influenza immunization. This immunization must be received by October of each academic year and documentation forwarded to the medical school by the student.

**E) Measles/Mumps/Rubella**

Students are required to provide evidence of two doses of measles, mumps and rubella vaccine.

**F) Tetanus /Diphtheria**

Immunization against tetanus and diphtheria is effective for approximately ten years from the date of immunization. Students must provide proof of receipt of a primary series of vaccines or booster received within the last 10 years.

Students are responsible for ensuring that these boosters to tetanus and diphtheria remain up to date after being admitted to the medical school.

**G) Polio**

Students are required to provide documentation of a complete primary series of polio vaccine. A complete series consists of 5 doses for children up to 6 years of age, and 3 doses after age 7.

- **Students who do not submit the appropriate immunization records will be suspended until proper documentation is provided.**

***Conclusion***

The information contained in this policy concerns important questions of public health which affect students and may affect the patients with whom they come into contact. Students are encouraged to discuss this policy with the Dean or his representative if there are any matters which require clarification. All enquiries will be welcomed and treated on a confidential basis.

Students are required to read and understand this policy

Students are required to be vaccinated against certain infectious diseases and are further required to visit a medical practitioner for the purpose of undergoing blood tests.

**(Student commencing in 20...)**  
**Consent to blood testing and vaccinations**

- Medical Students
- Nursing students
- Physiotherapy Students
- Dental students

I consent to specimens of my blood being collected and tested for Hepatitis B, Hepatitis C, HIV and immunity to vaccine preventable diseases during the application process of the medical school.

I also consent to immunization, tuberculin skin testing and a chest x-ray conducted on behalf of the medical school for its students.

I have read, understood and agree with the policy entitled “Policy for Immunization and Infectious Diseases Screening for Medical, Dental, Nursing, And Physiotherapy Students (2010)”.

Student Name	
Student Number	
Signature	
Date	

Students must complete this form and hand it to the appropriate program personnel together with the student application form.

**(Students commencing in 20...)**  
**Student Statement of Compliance with the Policy for Immunization and Infectious Diseases Screening for Medical, Dental, Nursing, And Physiotherapy Students (2010)**

- Medical Students
- Nursing students
- Physiotherapy Students
- Dental students

<i>Statement of compliance</i>	<ul style="list-style-type: none"> <li>• I have received, read and understood the document "Policy for Immunization and Infectious Diseases Screening for Medical, Dental, Nursing, And Physiotherapy Students".</li> <li>• I agree to comply with the policies and requirements set out in the document "Policy for Immunization and Infectious Diseases Screening for Medical, Dental, Nursing, And Physiotherapy Students (Version Year 2010)"</li> </ul>
<i>Student name</i>	
<i>Student number</i>	
<i>Signature</i>	
<i>Date</i>	

Students must complete this form and hand it to the appropriate program personnel, together with the student application form

# Annex 1

## Two-step testing

Some people who were previously infected with TB may have a negative reaction when tested years after infection, as the immune system response may gradually wane. This initial skin test, though negative, may stimulate (boost) the body's ability to react to tuberculin in future tests. Thus, a positive reaction to a subsequent test may be misinterpreted as a new infection, when in fact it is the result of the boosted reaction to an old infection.

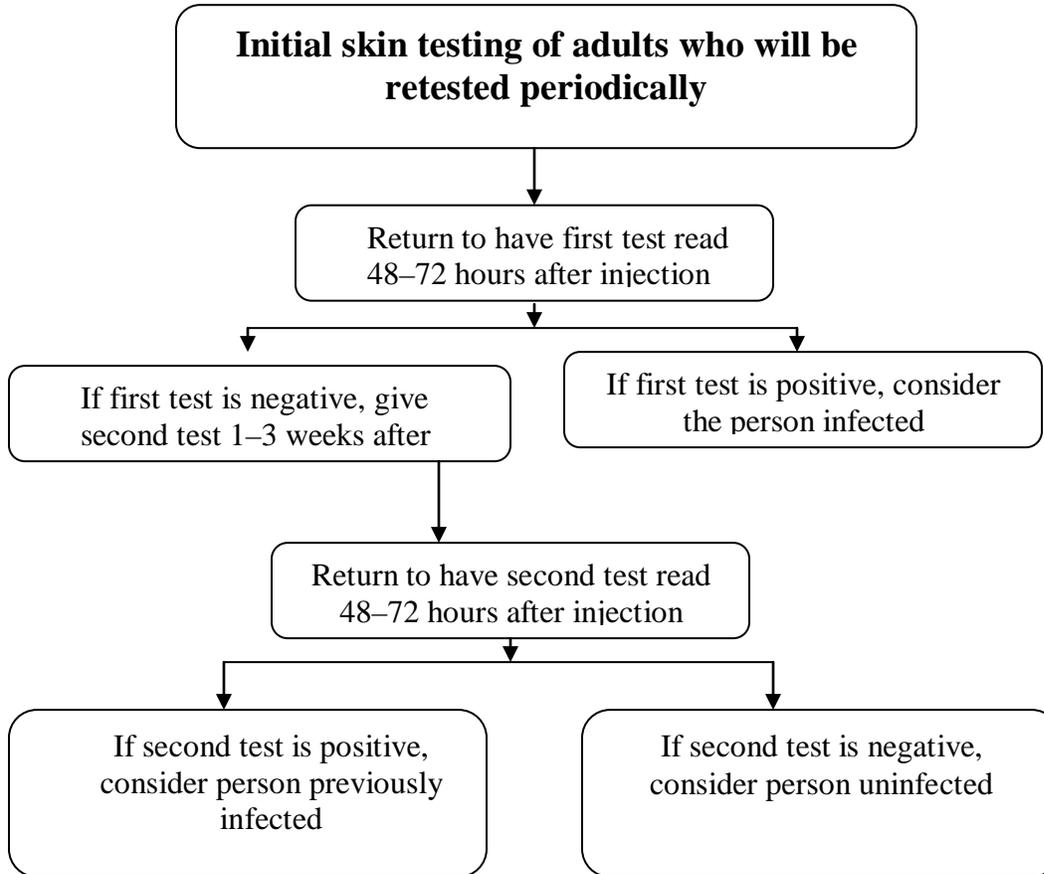
Use two-step testing for **initial** skin testing of adults who will be retested periodically (e.g., health care workers). This ensures that any future positive tests can be interpreted as being caused by a new infection, rather than simply a reaction to an old infection.

- Return to have first test read 48–72 hours after injection
- If first test is positive, consider the person infected.
- If first test is negative, give second test 1–3 weeks after first injection
- Return to have second test read 48–72 hours after injection
- If second test is positive, consider person previously infected
- If second test is negative, consider person uninfected

A person who is diagnosed as "infected" on two-step testing is called a "tuberculin converter". The recommendation that prior BCG-vaccination be ignored results in almost universal false diagnosis of tuberculosis infection in people who have had BCG (mostly foreign nationals).

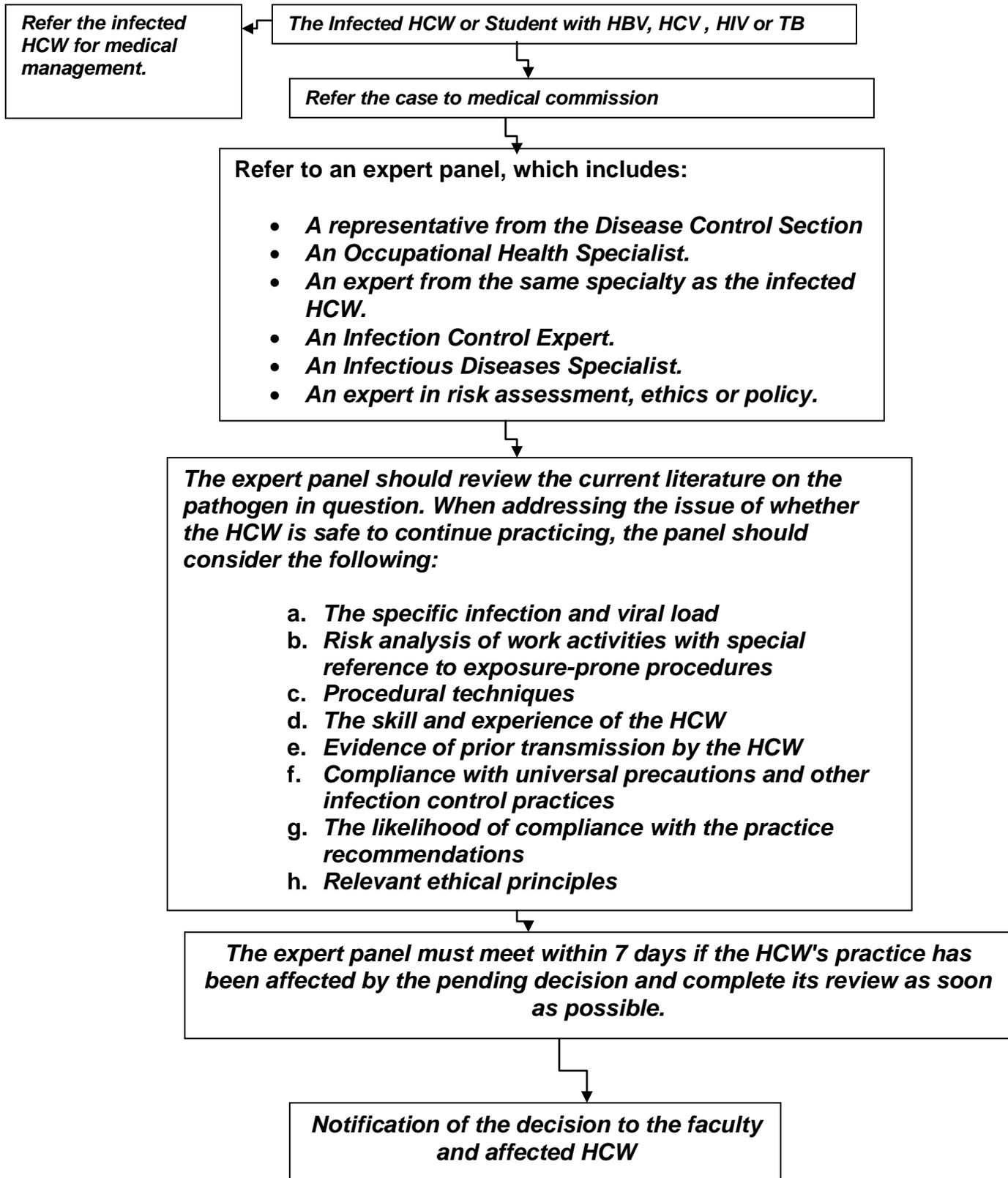
**N.B: The result of the TST done at country of residence will be considered as the first step and the repeated test will be considered as the second step.**

## Two-step testing



## Annex 2

### Management of students infected HCW with HBV, HCV , HIV or TB



## ***References:***

1. Diseases Control Section, Communicable Diseases Policy, Bahrain 2008.
2. Communicable Diseases Network of Australia, infection control guidelines for the preparation of transmission of infectious diseases in the health care setting 2001.
3. Faculty of Medicine, Dentistry and health sciences, Melbourne University, Medical, Dental and Physiotherapy Students and infectious diseases, 2004.
4. University Policy-Health and Safety (HIV, HBV and HCV), University of Medicine & Dentistry of New Jersey, 2004.
5. Management of Healthcare Workers Infected with Hepatitis B Virus, Hepatitis C Virus, Human Immunodeficiency Virus, or other Blood borne Pathogens, Infection Control and Hospital Epidemiology Journal, volume 18, No. 5, 1997.
6. Blood Borne Virus Policy, West London Mental Health NHS Trust Policy: ICP7 Date of Issue: July 2004
7. National Hepatitis C Testing Policy, Hepatitis C Subcommittee of the Ministerial Advisory Committee on AIDS, Sexual Health and Hepatitis and the Blood Borne Virus and STIs Subcommittee of the Australian Population Health Development Principal Committee May 2007.
8. Testing for Hepatitis C in Healthcare Workers Prior to a Known Occupational Exposure: A Reconsideration By David M. Sine, ARM, CSP, OHST, CPHRM 2008.
9. Blood Borne Communicable Diseases in Physicians, The College of Physicians and Surgeons of British Columbia, Updated September 2009