AFMC Student Portal Immunization and Testing Guidelines 2019

Contents

I. Introduction

This "Guidelines" document is to be used in conjunction with the 2019 "***AFMC Student Portal Immunization and Testing Form***" (the "Form"). Together, the Form and Guidelines can be used by health care professionals (HCP) as they assist students who are applying for electives at Canadian medical schools. The Guidelines provide more detailed information about the immunization requirements for Canadian and international medical students seeking elective placements at Canadian medical schools, whereas the Form is designed mainly to communicate immunization and testing results to the medical schools. Both the Form and the Guidelines have been developed in consultation with Association of Faculties of Medicine of Canada (AFMC) member institutions.

The items addressed are based on current Canadian immunization[1] and tuberculosis[2] recommendations, as well as consensus opinion between the AFMC partners. Items in blue font are excerpts from the Form.

[1] National Advisory Committee on Immunization (NACI) Canadian Immunization Guide, Evergreen Edition, Public Health Agency of Canada. Online: https://www.canada.ca/en/public-health/services/canadian-immunization-guide.html

II. Documents

The following documents have been developed for this process and are available on the AFMC Student Portal website (https://afmcstudentportal.ca/immunization):

1. *AFMC Student Portal Immunization and Testing Form ("Form")*
2. *Student Guide to the AFMC Student Portal Immunization and Testing Form*
3. *AFMC Student Portal Immunization and Testing Guidelines ("Guidelines")*

To ensure that the most current version of these documents is used, obtain them directly from the AFMC Student Portal website as needed. Use of third-party sources or stored versions is discouraged, as those versions may be invalid. Canadian medical schools are encouraged to provide a link to the AFMC Student Portal Immunization and Testing page from their school-specific Portal pages.

III. Process

1. Use of the Form

The Form must be used when a medical student is applying to a Canadian medical school for a visiting medical elective placement. The student must only complete Section A and if indicated, Appendices A, B and D. The student is responsible to: A) have the remainder of the Form completed by an appropriate health care professional and B) upload the completed form through the Student Portal to the appropriate medical schools in accordance with any school-specific instructions.

2. Health care professional

An appropriate health care professional (HCP) working within his or her scope of practice must complete all sections of the Form other than Section A and Appendices A, B and D. HCPs may include physicians, nurses (including nurse practitioners), or physician assistants. In some provinces pharmacists can perform immunizations, and such pharmacists can also complete specific sections of the Form relating to immunizations.

3. Medical school involvement in completing the Form

Each Canadian medical school is encouraged to facilitate Form completion for its students by identifying appropriate HCPs who have access to student health records and who can become familiar with the Form. Experience has shown that having an identified HCP complete the form benefits students, expedites the review process for the host school and contributes to a culture of safety. Students, however, may elect to have the form completed by an HCP independent of their medical school.

[2] Canadian Tuberculosis Standards, 7th Edition, 2014; Public Health Agency of Canada and Canadian Thoracic Society. Online: https://www.canada.ca/en/public-health/services/infectious-diseases/canadian-tuberculosis-standards-7th-edition/edition-22.html

4. Core pages and appendices

The Form is nine pages in length comprised of five core pages and four one-page appendices. All core sections (Sections A – J) must be completed for each student. Appendices are completed and attached only when applicable to a student's specific circumstances. Generally, when information is supplied on the Form by the HCP, no additional documents are to be appended, but a few circumstances require documentation to be attached. These instances are clearly stated in the Form. Some examples include: a letter from a physician describing a health concern that presents a contraindication to a specific immunization; rare occasions when laboratory evidence of infection is submitted as evidence of immunity in measles, mumps, rubella or varicella; or for students who require a chest X-ray, either the official report or a letter/form from a TB clinician describing the X-ray findings must be appended. **Western University** requires international trainees to upload actual proof of all immunizations, titers and physician letters together with the fully completed Immunization Form.

5. Multiple HCPs documenting on the Form

More than one HCP may be involved with completing the Form for a student. Some of the situations where this may occur are as follows:

a. One HCP may provide the first few doses of an immunization series, and another HCP may offer subsequent doses; both HCPs will be documenting on the same Form at different times.

b. A student may require an immunization or test after part of the Form has already been completed. For example, seasonal influenza vaccine may not be available at the time the Form is initially completed, and a student may need to have this added at a later date.

HCPs should ensure that their information is documented on page 2, i.e., name, profession (e.g., nurse, physician), address, telephone, fax, initials, signature, and date this information was documented. All entries made by the HCP on any part of the Form must be initialed. HCP initials verify that the HCP has either provided the service to the student, or the HCP has reviewed the student's adequately documented records. HCPs are permitted to recopy immunization or testing data and results onto the Form from another source so long as the HCP is satisfied the records are accurate. If more than three HCPs are involved with completing the Form, a second copy of page 2 can be printed and used to document the information for the additional HCP(s).

6. Submitting incomplete Forms

Students should ensure that all core sections and appropriate appendices of the Form are completed before submitting it as part of an application. Submission of incomplete Forms can create confusion and may result in delays within the electives approvals process. In certain exceptional circumstances, however (e.g., there is not enough time to complete a lengthy immunization series, or a specific vaccine

or test is not available), a Form that is missing information may be submitted with an updated Form to follow. Refer to Section VII (page 6) for additional details regarding this circumstance.

7. 2018/2019 Transition

Students who already applied for at least one visiting elective prior to the release of the 2019 Form or who already completed the 2018 version of the Form, may continue to use the 2018 Form for electives occurring in the 2018-2019 academic year. All other students should use the 2019 Form as soon as it becomes available on November 23rd of 2018.

8. Updates

The AFMC Student Portal Immunization Working Group meets annually to review national immunization and tuberculosis guidelines and update the Form and Guidelines if required. As necessary, AFMC partners are asked to approve any proposed changes.

At other times, any medical school may revise its requirements, and these changes will be posted on the school's page within the AFMC Student Portal.

IV. English and French Versions

The Form and Guidelines are available either in English or in French. There are no bilingual versions. Either version of the Form can be submitted to any Canadian medical school.

V. Previous Immunization Records Unavailable

Attempts should be made to obtain immunization records from any previous clinician, facility, or public health unit. If this is not possible then in general, the immunizations should be repeated. Parental recall of prior immunizations is known to correlate poorly with vaccines received and is not acceptable evidence of immunization. Serological testing for immunity has a very limited role in this area and for most immunizations is not recommended. The Canadian Immunization Guide states:[3]

> *"Routine serologic testing to determine the immunity of children and adults without immunization records is generally not practical. The following approach is recommended: Individuals who report incomplete immunization or lacking adequate documentation of immunization should be considered unimmunized and started on an immunization schedule appropriate for their age and risk factors."*

Students are encouraged to address requirements for the Form early enough to permit them to complete a missing immunization series.

[3] National Advisory Committee on Immunization (NACI) Canadian Immunization Guide, Evergreen Edition, Public Health Agency of Canada. Online: https://www.canada.ca/en/public-health/services/canadian-immunization-guide.html

VI. Chronic Bloodborne Pathogens
(First page on the Form)
Human Immunodeficiency Virus (HIV) and Hepatitis C
(Section J on the Form)

The chronic bloodborne pathogens of primary concern are hepatitis B virus (HBV), HIV, and hepatitis C virus (HCV). All students will have testing conducted for HBV.

The following appears on the Form (page 1):

> **Infections with Bloodborne Pathogens**: Students who have infection with hepatitis B virus, human immunodeficiency virus (HIV), and/or hepatitis C virus must familiarize themselves with the policies of the medical schools where they wish to apply.

Most Canadian medical schools do not require students to submit test results for HIV and HCV infection, with the exception of **McMaster University** and **Queen's University**. In the future other Ontario medical schools may require this reporting as well. Regardless of reporting requirements, students should know their status for all of these pathogens. Students with additional risk factors (e.g., lifestyle risks for infection) should consider periodic testing.

The following appears on the Form (page 5):

> Testing and reporting for human immunodeficiency virus (HIV) and hepatitis C virus is required for **Queen's University** and **McMaster University**, but only once an elective has been confirmed. Upload the official laboratory report via the school's AFMC Student Portal. Test results do not need to be shared with other medical schools. See specific details at each school's Student Portal page.
>
> **Queen's University**: Results must be current within 12 months of the elective application.
> **McMaster University**: Results must be dated after March 1 of the year of entry into medical school and are valid for 4 years.

VII. Additional Requirements of Schools

Although the Canadian medical schools have reached consensus on most items in the Form, there are still a few school-specific requirements. Students should ensure that they meet the requirements of any medical school where they wish to apply for a visiting medical elective. The following are areas where differences exist in requirements:

1. Mumps serology

In the event of a mumps outbreak during a visiting elective at the **University of Alberta**, the **University of Calgary** or **Memorial University of Newfoundland**, a visiting electives student may not be allowed to commence or complete the elective if the student's evidence of mumps immunity is based on serology alone, rather than a complete and documented immunization series or laboratory evidence of infection.

2. Updated tuberculin skin test (TST) and chest X-ray

Refer to the AFMC Student Portal website for the most current requirements by medical schools for updated TSTs and chest X-rays (https://afmcstudentportal.ca/Immunization).

3. Use of an interferon gamma release assay (IGRA) test in lieu of a TST

With the exception of **Western University**, an IGRA test is acceptable for international students in the unlikely event that a TST is unavailable. **Western University** requires TST results before accepting an application. As a TST is available throughout Canada, this issue will not affect a Canadian medical student applicant. Attach IGRA documentation to the Form showing results current within six months of medical school entry.

4. Seasonal influenza immunization

An up-to-date seasonal influenza immunization is required for electives occurring during November to June inclusive for the following medical schools: **Dalhousie University**, **McMaster University**, **Memorial University**, **McGill University**, **Northern Ontario School of Medicine**, **Queen's University**, **University of Manitoba**, **University of Ottawa**, **University of Toronto**, and **Western University**. The **University of British Columbia** requires either documented influenza immunization or that a mask be worn for electives occurring from November to June, inclusive. All other medical schools highly recommend influenza vaccination.

5. Human immunodeficiency virus (HIV) and hepatitis C testing

McMaster University and **Queen's University** require visiting elective students to submit proof of HIV and hepatitis C serological testing. Currently, no other Canadian medical schools require this. The requirements of these two schools differ somewhat. For **Queen's University,** results must be current within 12 months of the elective application. For **McMaster University**, results must be dated after March 1 of the year of entry into medical school and are valid for 4 years.

6. Incomplete Forms

As mentioned in Section III, students should make every possible effort to have all parts of the Form completed before submitting it as part of an application. In a few special circumstances, most medical schools will accept an incomplete Form. For example, a student has received two of three doses of an immunization series and the third dose cannot be given for several more months. **Western University**, however, requires that the Form must be fully complete before an application will be processed. Note that "extra" items specific to a particular school (e.g., HIV and hepatitis C testing for **McMaster University** and **Queen's University**) do not need to be obtained until an elective is confirmed with that specific school.

7. Submitting additional records

As mentioned in Section III, paragraph 4, generally, it is not necessary to attach original immunization documentation or official laboratory reports when the HCP supplies the information on the Form. Some exceptions to this general rule exist. **Western University** requires international trainees to upload actual proof of immunizations, titers and physician letters together with the fully completed Form. Applications will not be processed by **Western University** if this is not done. In the unlikely event that laboratory evidence of infection exists and is used to document immunity to measles, mumps, rubella or varicella, then laboratory reports must be attached. Likewise, in the event that a chest x-ray is required related to tuberculosis (TB), then extra documentation must be attached.

VIII. Exceptions and Contraindications to Immunization and Testing Requirements
(Section C on the Form)

Students may be granted an exemption from a specific immunization requirement for a medical or health condition. Adequate documentation is required for an exemption to be considered. An exemption will fall under one of the following categories:

1. Allergy
A student may have a suspected immunoglobulin E (IgE) mediated or other serious allergy to a specific vaccine, vaccine component, or tuberculin, making that item contraindicated for the student; adequate documentation from a physician is required.

2. Compromised immune system
A student may have a compromised immune system due to the use of immune-suppressing medications, certain infections (e.g. HIV infection), or genetic disorders. In such situations a specific vaccine may be contraindicated, or a vaccine or test may require special timing relative to medical therapy. Adequate documentation from a physician is required. Special immunization or serological testing requirements that are different from those listed in this document may be recommended for these students. Consultation with an infectious diseases expert is recommended in such situations.

3. Pregnancy
Live vaccines are contraindicated in pregnancy. Some vaccines are known to be safe during pregnancy, while other vaccines may require a balancing of the benefits versus risks; depending on the risk assessment, a vaccine may be deferred until the student is no longer pregnant. Documenting a self-reported history of pregnancy is considered adequate. For more information on immunization in pregnancy and breastfeeding please refer to the Canadian Immunization Guide section on Immunization in Pregnancy and Breastfeeding.[4]

4. Other
Some vaccines may not be appropriate for an individual due to a specific medical condition or concern; such situations should be addressed on an individual basis.

The following appears on the Form (page 2):

Is the student UNABLE to meet any of the requirements listed in this document due to a medical or health condition?

☐ No, a medical or health condition is not present
☐ Yes, a medical or health condition is present; provide details below OR attach relevant information from a physician (for example: "unable to receive live vaccines due to current use of a biological agent"). Affected students must complete the ***Exceptions and Contraindications to Immunization and Testing Requirements, Self-Declaration Form*** (**Appendix A**)

Details:

[4] https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-3-vaccination-specific-populations/page-4-immunization-pregnancy-breastfeeding.html

☐ Relevant information from a physician attached

IX. Pertussis
(Section D on the Form)

Students require a single dose of adult acellular pertussis containing vaccine (given as combined tetanus/diphtheria/acellular pertussis [Tdap] vaccine, or Tdap-Polio vaccine if a dose of polio is also necessary), on or after 18 years of age.[5] This is required regardless of when the last dose of tetanus/diphtheria-containing vaccine or tetanus/diphtheria/acellular pertussis-containing vaccine was given; it is required also regardless of when the next booster dose of tetanus/diphtheria-containing vaccine is due. The precise type of vaccine must be known; if information on the type of vaccine used is no longer available, repeat the immunization. This is necessary as clinicians have in the past mistaken different types of tetanus and diphtheria containing vaccines, which may or may not contain an acellular pertussis component.

The following appears on the Form (page 2):

Document a one-time pertussis vaccine (Tdap or Tdap-Polio) given at **age 18 years or older** (required even if not due for a booster):

Date (yyyy-mm-dd)	Type of vaccine used*	Age received (must be 18 years or older)	HCP Initials

* The precise type of vaccine used must be known; if this information is no longer available, repeat the immunization. Typically tetanus/diphtheria/acellular pertussis (Tdap) or tetanus/diphtheria/acellular pertussis/polio (Tdap-Polio) will be used.

X. Tetanus, Diphtheria, and Polio
(Section E on the Form)

1. Tetanus and Diphtheria

As tetanus and diphtheria toxoid vaccines typically are provided combined and have identical requirements, they will be considered together here. Students require each of the following:

a. A documented complete tetanus/diphtheria immunization series, consisting of a minimum of three doses of tetanus/diphtheria-containing vaccine.

b. One dose of tetanus/diphtheria-containing vaccine must be documented within the past ten years.

c. One dose of tetanus/diphtheria-containing vaccine must be given as tetanus/diphtheria/acellular pertussis containing (e.g., Tdap) vaccine, if receipt of this vaccine has not yet been given at 18 years of age or older (see “Pertussis” above).

[5] Preparations authorized for use in Canada include ADACEL®, ADACEL®-POLIO, BOOSTRIX®, and BOOSTRIX®-POLIO.

For a tetanus/diphtheria adult primary immunization series, the first and second doses should be given ideally a minimum of eight weeks apart (must be a minimum of four weeks apart), and there must be at least six months between the second and third doses. All previous doses count. A recommended approach is to provide documentation of only the last three doses given, as this is generally an adequate number of doses for an adult, so long as the proper spacing between doses has been respected.

2. Polio

Students require a documented complete polio immunization series, consisting of a minimum of three doses of polio vaccine. For a polio adult primary immunization series the first and second doses should be given ideally eight weeks apart (must be a minimum of four weeks apart), and there must be at least six months between the second and third doses. All previous doses count, including oral polio vaccine (OPV), inactivated polio vaccine (IPV), and any combination schedule of the two. A recommended approach is to provide documentation of the last three doses given, as this is generally an adequate number of doses for an adult, so long as the proper spacing between doses has been respected.

A polio adult booster dose (i.e., a dose given on or after the age of 18, if the primary series was documented prior to 18 years of age) is not required for students working in Canada. Students with increased risk of exposure to polioviruses (e.g., travel to endemic areas of the world) should consider a booster dose of polio vaccine, if a dose was not yet received on or after 18 years. However, the **University of British Columbia** recommends visiting students who may be exposed to feces have a single booster dose of polio vaccine (if the primary series of polio was given ten or more years ago); this is not required for the purposes of satisfying visiting elective requirements.

The following appears on the Form (page 2):

Document the **last three** tetanus/diphtheria and polio containing immunizations (minimum one month between first two doses of a series; minimum six months between last two doses; last tetanus/diphtheria immunization must be within the past **ten years**). Serology is not accepted for tetanus, diphtheria, and polio.

	Tetanus/diphtheria, Date (yyyy-mm-dd)	Polio, Date (yyyy-mm-dd)	HCP Initials
Last dose received:			
Previous dose:			
Previous dose:			

XI. Tuberculosis
(Section F on the Form)

1. Purpose of testing

Most students will require a test for latent tuberculosis infection (LTBI), using a tuberculin skin test (TST), unless a contraindication to testing exists. The purpose of this testing is the following:

a. To determine a student's baseline TST status; for future comparison if the student requires testing after an exposure;

b. To determine which students may have LTBI; to permit further evaluation of the student, to permit the student to consider the option of LTBI therapy, and/or to allow the student to be aware of the possibility of infection reactivating to active tuberculosis (TB) disease, and be aware of the signs and symptoms of reactivation.

Students generally have a baseline TB assessment performed when they enter Medicine (medical schools may decide to do this in year 1, 2, or 3). Students should have an assessment for LTBI using a TST a minimum of six months prior to the start of medical school; if the most recent assessment was performed earlier than this, a more recent LTBI assessment is required to satisfy the requirements of the Form.

2. Positive TB history

Students with a positive TB history include those with a documented positive TST, clear history of blistering TST reaction, a positive interferon gamma release assay (IGRA) test, and previous diagnosis and/or treatment for TB disease or TB infection. Students with a positive TB history need to provide documentation of a chest X-ray obtained at the time of or after the positive TB finding (see chest X-ray section below). Such students must complete and attach the ***Tuberculosis Awareness, and Signs and Symptoms Self-Declaration Form (Appendix B)***. Students do not need to submit documentation of previous treatment for LTBI or active TB disease. Treatment for LTBI is not a requirement of the Form.

The following appears on the Form (page 3):

TB History: Does the student have ANY of the following: a previous history of a positive tuberculin skin test (TST); a clear history of blistering TST reaction; a positive interferon gamma release assay (IGRA) test; a previous diagnosis of TB disease or TB infection; a history of treatment for TB disease or infection?

☐ **Yes –** Document positive TST in #2 below, or for those with another positive TB history, attach records demonstrating the positive history. The student must complete and attach the ***Tuberculosis Awareness, and Signs and Symptoms Self Declaration Form*** **(Appendix B).** The student should not have a repeat TST. Once the TB history has been documented in #2 below or by attaching records of the positive TB history, skip to #4.

☐ **No –** Documentation of a two-step TST is required. Go to #2.

3. Contraindications to a TST

Contraindications to a TST include:

a. Extensive burns or eczema present over any possible TST testing sites, including forearms and upper arms;

b. Current major viral infections (e.g., measles, mumps, varicella); wait for the infection to resolve and then administer a TST;

c. Having received parenterally a live virus immunization within the past 28 days, as this has been shown to increase the likelihood of false-negative TST results; a TST may be administered 28 or more days afterwards.

The following are not contraindications to administration of a TST: previous Bacillus Calmette–Guérin (BCG) vaccination, a common cold, pregnancy or breastfeeding, receipt of vaccines (including live vaccines) on the same day as the TST, an undocumented non-blistering previous positive TST reaction, and low doses of systemic corticosteroids, <15 mg prednisone (or equivalent) daily. It generally takes a steroid dose equivalent to ≥15 mg prednisone daily for 2-4 weeks to suppress tuberculin reactivity. Students who are on high doses of systemic corticosteroids can safely receive a TST, but the result should be interpreted cautiously (see **Table 1: TST Measurements**).

4. Two-step TST

If no contraindications currently exist, documentation of a two-step TST is required. Once a two-step TST is documented it never needs to be repeated; all future TSTs can be single (one-step) tests.

When conducting a two-step TST, only if the first TST is negative should a second TST be administered. The second TST is administered ideally 7 to 28 days (up to one year) after the first, preferably using the opposite arm. If either the first or second test in a two-step TST is positive, the student should be medically evaluated with a chest x-ray and symptom review.

5. Proper TST technique

The TST must be performed using the Mantoux technique, which consists of intradermal injection of tuberculin material into the inner surface of the forearm. Tubersol 5 tuberculin units (5-TU) of PPD-S (purified protein derivative, standard) is recommended in Canada. Documentation of the TST must include a measurement of millimeters of induration as well as an interpretation (“positive” or “negative”); erythema should not be measured. While 10 mm or greater is typically the threshold used for a positive TST, there are other situations where a positive TST may be diagnosed at a smaller measurement of induration (see **Table 1: TST Measurements**).

The TST must be read by a trained healthcare worker 48 to 72 hours after administration; readings outside of this time period must not be accepted. Self-read TSTs must not be accepted.

6. Timing with vaccines

A TST may be administered on the same day as a live virus vaccine. However, if the TST and the live virus vaccine are not given on the same day, a TST must be delayed for a minimum of 28 days after a live virus vaccine is given. This restriction applies to live virus vaccines such as measles, mumps, rubella, varicella, and yellow fever containing vaccines administered parenterally; it does not apply to live influenza virus vaccine administered intranasally. The TST can be given at any time in relation to a non-live vaccine (e.g., any day before, the same day, or any day afterwards).

7. Bacillus Calmette–Guérin (BCG) Immunization

Documentation of a previous BCG immunization is not required for visiting electives applications. A new or repeat BCG immunization is not recommended for medical students practicing in Canada. A previous BCG immunization is not a contraindication to a TST.

8. Documenting TST dates

Both the administration and the reading dates of the TST should be documented. If only a single date is available this is acceptable so long as appropriate spacing between TSTs and/or vaccines can be verified. If it is not clear whether a two-step TST involved administration of the two tests a minimum of seven days apart, the second TST must not be counted. Similarly, if it is possible that a TST was given on days 1 to 27 after a parenteral live virus vaccine was administered, the TST results must not be counted.

9. Interferon Gamma Release Assay (IGRA) tests

IGRA tests are not a substitute for a TST in Canada due to challenges in the interpretation of serial testing. As a TST is available in every province and territory, a negative IGRA test will not be accepted as a substitute for the TST for Canadian medical students applying for an elective placement, except in rare situations where a TST is contraindicated (as listed above). However, an IGRA test may be performed in students with a positive TST to aid in the assessment of the student; such a test is optional and any such results do not need to be submitted with the Form.

At most Canadian medical schools, an IGRA test, current within six months of medical school entry, will also be accepted from an international student arriving from a jurisdiction where it can be shown that a TST is **not available.** Separate documentation of the test result must be attached to the Form. **Western University** will not accept an IGRA in lieu of a TST. If TST results are not available **Western University** will not accept the visiting elective application.

The following appears on the Form (page 3):

> **TST**: For students without a positive TB history, documentation of a two-step TST is required (two separate tests, ideally 7-28 days apart but may be up to 12 months apart). A two-step TST given at any time in the past is acceptable; a two-step TST does not need to be repeated. Previous Bacillus Calmette–Guérin (BCG) vaccination is not a contraindication to having a TST. A TST can be given either before, the same day as, or at least 28 days after a live virus vaccine. With the exception of Western University, an IGRA test is acceptable for international students when a TST is unavailable (this is rare). Attach IGRA documentation showing results current within six months of medical school entry. Western University requires TST results before accepting an application.

Two-Step TST:

	Date Given* (yyyy-mm-dd)	Date Read* (yyyy-mm-dd)	Millimeters of Induration	Interpretation according to Canadian TB Standards[6]	HCP Initials
Step 1					
Step 2					

* If only a single date is available this is acceptable so long as appropriate spacing between TSTs and/or vaccines can be verified

If the two-step TST was done more than six months prior to medical school entry the student needs to have a single TST performed. For a list of schools requiring a TST within 12 months of the elective start date please refer to https://afmcstudentportal.ca/Immunization.

Most Recent TST: (not including TSTs documented above).

[6] Whether a particular TST measurement is considered positive or negative may depend on the client's exposures and risk factors; see Table 1.

	Date Given* (yyyy-mm-dd)	Date Read* (yyyy-mm-dd)	Millimeters of Induration	Interpretation according to Canadian TB Standards[7]	HCP Initials
Recent TST					

* If only a single date is available this is acceptable so long as appropriate spacing between TSTs and/or vaccines can be verified

Students found to have a positive TST also must complete and attach the ***Tuberculosis Awareness, and Signs and Symptoms Self-Declaration Form*** (**Appendix B**).

Table 1: TST Measurements

TST Result	Situation in which reaction is considered positive
0-4 mm	• Child under 5 years of age and high risk of TB infection
≥5 mm	• HIV infection • Contact with infectious TB case within the past 2 years • Presence of fibronodular disease on chest x-ray (healed TB, and not previously treated) • Organ transplantation (related to immune suppressant therapy) • TNF alpha inhibitors • Other immunosuppressive drugs, e.g. corticosteroids (equivalent of ≥15 mg/day of prednisone for 1 month or more; risk of TB disease increases with higher dose and longer duration) • End-stage renal disease
≥10 mm	• All others, including the following specific situations: o TST conversion (within 2 years) o Diabetes, malnutrition (<90% ideal body weight), cigarette smoking, daily alcohol consumption (>3 drinks/day) o Silicosis o Hematologic malignancies (leukemia, lymphoma) and certain carcinomas (e.g. head and neck)

Adapted from: Canadian Tuberculosis Standards, 7th Edition, 2014.

10. Repeat TSTs During Medical School

The frequency with which routine TSTs are necessary will be decided by a student's home medical school, taking into account factors such as the prevalence of TB in the community served and the likelihood of significant exposures experienced by medical students. A recent TST (e.g., within the past 12 months of a proposed elective date) is not required routinely for students for the purposes of elective placements at most Canadian medical schools; for a list of schools requiring a TST within 12 months of the elective start date please refer to https://afmcstudentportal.ca/Immunization.

11. Risk assessment for TB exposures

Students applying for electives must have a risk assessment for exposures to infectious TB since the initial baseline assessment for LTBI at the start of medical schools. The risk assessment appearing in

Question 3 (see below) must be completed for all students who have a negative history for TB (i.e., the answer to Question 1 is 'No'). If based on this assessment any likely exposures occurred, the Canadian medical schools have agreed that a TB symptom review could be used instead of a TST for the purposes of the Form (a TST should still be considered for a post-exposure or post-travel assessment, but this is not a requirement of the Form). Students with a negative TB symptom review are very unlikely to have active (infectious) TB disease and therefore pose a negligible risk of transmission to others.

The following appears on the Form (page 3):

3. If 'No" was reported in Question 1: Provide responses to the following three statements regarding the student's experiences since admission to medical school:

☐ Yes ☐ No The student had significant[7] exposure to an individual diagnosed with infectious TB disease

☐ Yes ☐ No The student spent time in a clinical setting with high risk of exposure to infectious TB (e.g., international electives)

☐ Yes ☐ No The student lived or worked in an area of the world with high TB incidence[8]

If "**Yes**" applies to the student on one or more of these three statements, the student must complete the ***Tuberculosis Awareness, and Signs and Symptoms Self-Declaration Form*** (**Appendix B**).

12. High incidence TB countries

For the purposes of visiting elective requirements a high-incidence country for tuberculosis will be any country with 30 or more cases per 100,000 for all forms of active TB disease (three year average). This definition is used in the Canadian Tuberculosis Standards and was adopted from the World Health Organization. For a list of TB incidence rate estimates refer to Table A4.1 at:[9] http://www.who.int/tb/publications/global_report/gtbr2018_annex4.pdf?ua=1. When using the table refer to the rate in the first column, "Incidence (Including HIV)". For example, the first country listed, Afghanistan, would have a rate of 189 per 100,000 population.

13. Chest X-ray

Students with a positive TB history need to provide documentation of a chest X-ray obtained at the time of, or after, the positive TB finding. Generally a repeat chest X-ray is not required. However, if abnormalities of the lung or pleura are noted on the initial chest X-ray or in the student's symptom review (Appendix B) then a repeat chest X-ray may be necessary, at the discretion of the HCP. Most students, however, will not have any abnormalities noted, and therefore they would not require a repeat chest X-ray. For a list of schools requiring a more recent chest X-ray refer to https://afmcstudentportal.ca/Immunization.

The following appears on the Form (page 3):

[7] Whether an exposure was significant and requires follow-up testing should be determined by the occupational health unit in the facility, or public health unit in the local jurisdiction of the exposure.

[8] For a definition of high incidence countries refer to "*AFMC Student Portal Immunization and Testing Guidelines*" (https://afmcstudentportal.ca/immunization).

[9] World Health Organization. Global Tuberculosis Report 2018. Geneva: WHO, 2018.

Chest X-ray: If a student has a positive TST documented or any other positive TB history, the student must have a chest X-ray dated subsequent to the positive TST or other positive TB history. A routine repeat or recent chest X-ray is not required unless there is a medical indication (e.g., symptoms of possible TB disease).

Chest X-ray required?

☐ Yes – Attach the report (or letter from a TB physician specialist or TB clinic report describing the film)

☐ No

If any abnormalities of the lung or pleura are noted on the chest X-ray report, further documentation from a physician is required to explain the findings. Physicians may either use the form ***Explanation of Radiographic Findings*** (**Appendix C**) or alternatively, attach a letter that provides the information sought in Appendix C.

XII. Measles, Mumps Rubella and Varicella
(Section G on the Form)

1. Criteria for measles, mumps, rubella and varicella immunity

The criteria for measles, mumps, rubella, and varicella immunity are listed in the Form excerpt below. Although the Canadian Immunization Guide states that a self-reported history or health care provider diagnosis of varicella or herpes zoster may be acceptable evidence of immunity in specific circumstances, these criteria of varicella immunity are not used on the Form. Identified problems with this method include inability of students to obtain a physician's documentation and the possibility of inappropriate reporting of disease history from the student or a parent/guardian.

2. Post-immunization serology testing

Post-immunization serology testing for measles, mumps, rubella, or varicella should not be done. Once immunization requirements have been met, negative post-immunization results should generally be ignored. On occasion post-immunization serological testing for rubella antibodies is conducted, even in the presence of adequately documented rubella immunizations (e.g., prenatal care). For the purposes of elective requirements, in the presence of adequate immunization records, negative post-immunization rubella serology results should be ignored; for the purposes of prenatal care, various organizations offer different approaches to this situation, which is beyond the scope of this document.

3. Laboratory evidence of infection

Laboratory evidence of infection is an uncommon, but acceptable means to document immunity for measles, mumps, rubella, or varicella. Laboratory reports documenting this evidence (e.g., isolation of virus; detection of deoxyribonucleic acid or ribonucleic acid; seroconversion) must be attached to the Form.

The following appears on the Form (page 4):

General Requirements:

ONE of the following items is required as evidence of immunity to **measles**:

1. TWO doses of live measles-containing vaccine, given 28 or more days apart, with the first dose given on or after 12 months of age; OR
2. Positive serology for measles antibodies (IgG); OR
3. Laboratory evidence of measles infection.

ONE of the following items is required as evidence of immunity to **mumps**:

1. TWO doses of live mumps-containing vaccine, given 28 or more days apart, with the first dose given on or after 12 months of age); OR
2. Positive serology for mumps antibodies (IgG); OR
3. Laboratory evidence of mumps infection.

ONE of the following items is required as evidence of immunity to **rubella**:

1. ONE dose of live rubella-containing vaccine, given on or after 12 months of age; OR
2. Positive serology for rubella antibodies (IgG); OR
3. Laboratory evidence of rubella infection.

ONE of the following items is required as evidence of immunity to **varicella**:

1. TWO doses of live varicella-containing vaccine, given ideally a minimum of six weeks apart (absolute minimum 28 days apart), with the first dose given on or after 12 months of age; OR
2. Positive serology for varicella antibodies (IgG); OR
3. Laboratory evidence of varicella infection.

Immunizations:

	Vaccine 1, Date (yyyy-mm-dd)	Vaccine 2, Date (yyyy-mm-dd)	HCP Initials
Measles Vaccine			
Mumps Vaccine			
Rubella Vaccine		**NOT REQUIRED**	
Varicella Vaccine			

Serology: For students with no record of measles, mumps or rubella immunizations a preferred approach is to immunize without checking pre-immunization serology (regardless of age), although testing serology (IgG) is an acceptable alternative to immunization. In the event of a mumps outbreak during a visiting elective at the **University of Alberta**, the **University of Calgary** or **Memorial University of Newfoundland**, a visiting electives student may not be allowed to commence or complete the elective if the student's evidence of mumps immunity is based on serology alone, rather than a complete and documented immunization series or laboratory evidence of infection.

For students with no record of varicella immunizations, varicella serology must be tested. Post-immunization serology testing for measles, mumps, rubella, or varicella should NOT be done once immunization requirements have been met.

	Test Date (yyyy-mm-dd)	Laboratory Result	Interpretation (Immune or non-immune)	HCP Initials
Measles IgG				
Mumps IgG				
Rubella IgG				
Varicella IgG				

Laboratory Evidence of Infection: (Note: Having this evidence is uncommon). Submit the laboratory report with this form if a student has laboratory evidence of actual infection (e.g., isolation of virus; detection of deoxyribonucleic acid or ribonucleic acid; seroconversion) to measles, mumps, rubella, or varicella. This evidence will meet the requirements of immunity for the item.

☐ Laboratory evidence of infection attached

4. Recommended approach to varicella immunity

The following approach is recommended for students who do not already have laboratory evidence of previous varicella infection or positive serology for varicella antibodies:

a. Students with a self-reported history of varicella or herpes zoster infection:

Check serology for varicella antibodies (anti-VZV, immunoglobulin G [IgG]). If antibody levels are positive, no further testing or varicella immunizations are required. If antibody levels are negative (i.e., non-reactive, or below the critical test threshold for a positive result) provide the student two doses of varicella-containing vaccine spaced ideally a minimum of six weeks apart (absolute minimum 28 days apart). Post-immunization serology should not be performed.

b. Students with an unclear or absent history of varicella or herpes zoster infection:

Check serology for varicella antibodies (anti-VZV, IgG), as the majority of students will likely have immunity to varicella. If antibody levels are positive, no further testing or varicella immunizations are required. If antibody levels are negative (i.e., non-reactive or below the critical test threshold for a positive result) provide the student two doses of varicella-containing vaccine, spaced ideally a minimum of six weeks apart (absolute minimum 28 days apart). Post-immunization serology should not be performed.

c. Students with negative varicella serology (anti-VZV IgG):

Provide the student two doses of varicella-containing vaccine, spaced ideally a minimum of six weeks apart (absolute minimum 28 days apart). Post-immunization serology should not be performed.

d. Students with one dose of varicella vaccine documented:

Provide one more dose of varicella vaccine, ideally a minimum of six weeks (absolute minimum 28 days) after the previous dose. The first dose must have been given on or after 12 months of age to be considered valid. Post-immunization serology should not be performed.

e. Students with two doses of varicella vaccine documented:

No further varicella immunizations are required if both doses were provided on or after 12 months of age and spaced a minimum of four weeks apart; post-immunization serology should not be performed. Negative post-immunization results should generally be ignored.

XIII. Hepatitis B

(Section H on the Form)

In the absence of *bona fide* medical or health condition that is reported in Section C and Appendix A, or any of the situations described in Category 3 or Category 4 below, documentation of a hepatitis B immunization series is required for all students. All students must be assessed for immunity to hepatitis B, as well as hepatitis B infection. For most visiting medical students a hepatitis B assessment has already been conducted (usually at or near the time of entry into medical school) and therefore detailed direction on how to do this is not included on the Form.

1. Categories of hepatitis B immunity status

Students will fall into one of the five categories listed below. It is not necessary to list on the Form under which category the student falls, as this should be self-explanatory from the immunization and/or serological information provided.

a. Category 1: Immune through documented series

The student has received a complete, documented hepatitis B immunization series, and post-immunization serology has demonstrated immunity (antibody to hepatitis B surface antigen [anti-HBs] titre of at least 10 IU/L).[10] A student may have demonstrated immunity without the need for additional doses of vaccine beyond the initial series. Alternatively, a student may have required a booster dose of hepatitis B vaccine, or a complete second hepatitis B series, before demonstrating immunity.

b. Category 2: Vaccine failure

The student has received two complete, documented hepatitis B immunization series, and post-immunization serology has not demonstrated immunity (anti-HBs remains less than 10 IU/L)[10]. For a student in this category it is important to ensure (1) that each immunization series was documented, all doses were provided, and that minimal spacing between doses were respected; and (2) that post-immunization serology was conducted between 28 days and six months after the final dose of the series to be considered reliable. The student is considered non-immune and generally no further pre-exposure hepatitis B immunizations or testing are required. The student should be advised of the need for passive immunization after potential exposure to hepatitis B virus. Such students must also complete the ***Hepatitis B Vaccine Non-Immune Self-Declaration Form*** **(Appendix D)**.

c. Category 3: Immune due to natural infection

The student is immune due to presumed natural infection. This means positive anti-HBs as well as positive antibody to hepatitis B core antigen (anti-HBc). Pre-immunization serology can be considered for high-risk students who may have previously been infected (e.g., a student was born and/or lived in a country with high rates of hepatitis B infection; a student was born to a mother who previously lived in a country with high rates of endemic hepatitis B). On serological testing such a student will be found be anti-HBs positive, antibody to hepatitis B core antigen (anti-HBc) positive, and hepatitis B surface antigen (HBsAg) negative. Such a student is immune and does not require further hepatitis B immunizations or testing. Students with positive anti-HBs but negative anti-HBc are unlikely to have been naturally infected, and instead are more likely to be in Category 5 (see below).

d. Category 4: Hepatitis B infection

The student has hepatitis B infection (HBsAg positive). Students in this category must familiarize themselves with the chronic bloodborne pathogen policies of the medical schools where they wish to apply. HCPs must ensure that the test for HBsAg was not conducted within 21 days of administration of hepatitis B vaccine, as this can cause a false-positive HBsAg result. The student

should be assessed by an expert in viral hepatitis. HBsAg positive students do not require further testing for immunity or hepatitis B immunizations.

e. Category 5: Positive antibodies, undocumented series

The student has serology demonstrating positive antibodies (anti-HBs titre of at least 10 IU/L)[10], with an incomplete or undocumented hepatitis B immunization series (previous infection is not suspected). Students in this category require a complete, documented hepatitis B immunization series, and post-immunization serology 1-2 months after the final dose of the series.

2. Testing for chronic hepatitis B infection

All students must be tested for hepatitis B surface antigen (HBsAg) at least once; the test must be conducted on or after the time of the assessment for hepatitis B immunity (e.g., a test performed years prior to the hepatitis B immunization series is not adequate). Relying solely on antibody to hepatitis B surface antigen (anti-HBs) results to determine which students should be tested for chronic hepatitis B infection may miss some infected students, as it is possible to have a positive anti-HBs result and at the same time have a positive HBsAg result; approximately 5% of chronic hepatitis B carriers also have positive levels of anti-HBs. All students with chronic hepatitis B infection must familiarize themselves with the policies of the medical schools where they wish to apply; detailed direction on this is beyond the scope of this document.

3. Antibody to hepatitis B core antigen (anti-HBc)

While some students may have been tested for anti-HBc as part of their assessment, it is not necessary to include this information on the Form for most students, unless the HCP is claiming the student is in Category 3 above (i.e., immune due to natural infection, positive anti-HBc and positive anti-HBs). If this is the case append the laboratory report showing these results.

The following appears on the Form (page 5):

Immunizations: Documentation of a hepatitis B immunization series is required for **all students**. Positive serology (anti-HBs) will not be accepted if there is an incomplete or absent record of immunization (exception: students immune due to natural immunity, i.e., positive anti-HBs AND positive anti-HBc, or students with hepatitis B infection do not require immunizations documented). Students with an incomplete documented series must complete ***Hepatitis B Non-Immune Self-Declaration Form*** (**Appendix D**).

	Date (yyyy-mm-dd)	Type of vaccine used *	HCP Initials
Vaccine 1:			
Vaccine 2:			
Vaccine 3 (If required):			
Vaccine 4 (If required):			
Vaccine 5 (If required):			
Vaccine 6 (If required):			

* If information on the name of the vaccine given is no longer available, simply document the date of the immunization.

[10] Dalhousie University uses an anti-HBs titre threshold of 12 IU/L as indicative of hepatitis B immunity.

Serology: Both anti-HBs (hepatitis B surface antibody) and HBsAg (hepatitis B surface antigen) are required.

Anti-HBs (test for immunity): For students who are able to achieve immunity, only one positive anti-HBs result is required, which must be dated 28 or more days after the immunization series is completed. Repeat testing after this is not recommended. If the student is not immune, only the most recent negative post-immunization anti-HBs is required; such students must also complete the form ***Hepatitis B Non- Immune Self-Declaration Form*** **(Appendix D).** For students who are vaccine non-responders (i.e., student has received two complete, documented hepatitis B immunization series and post-immunization serology 1-6 months after the final dose has not demonstrated immunity), generally no further hepatitis B immunizations or serological testing are required.

HBsAg (test for infection): Required for **all students**, including those who are believed to be immune to hepatitis B. Test must be conducted on or after the time of the assessment for hepatitis B immunity, OR if hepatitis B primary immunization series is still in process, test must be dated on or after medical school admission. Wait until 28 days after a hepatitis B immunization to avoid the possibility of a false-positive HBsAg result. Once the primary immunization series has been completed, repeat testing for HBsAg may be omitted from any additional testing conducted at the discretion of the HCP.

Both tests required for all students:	Date (yyyy-mm-dd)	Laboratory result	Interpretation	HCP Initials
anti-HBs (antibody)			☐ Immune ☐ Non-immune	
HBsAg (antigen)			☐ Immune ☐ Non-immune	

Students who are **HBsAg positive** (i.e., presence of hepatitis B infection) must familiarize themselves with the policies of the medical schools where they wish to apply.

4. Acceptable types of hepatitis B immunization series

For students not immune by natural infection and who are undertaking an immunization series, there are 2-dose, 3-dose, and 4-dose monovalent hepatitis B and combined hepatitis B immunization series (e.g., hepatitis A and hepatitis B combined vaccine) that are acceptable; whether a series is complete depends on the age of the recipient, the number and spacing of the doses, and the dose of vaccine used (see **Table 2: Hepatitis B Vaccines**).

5. Post-immunization serological testing

For healthcare workers post-immunization serology should be tested a minimum of 28 days after completion of an immunization series. The Canadian Immunization Guide offers the following recommendations for various clinical scenarios around post-immunization serology[11] (see **Figure 1: Hepatitis B Immunization Algorithm**):

a. "If an adequate anti-HBs titre is confirmed, serologic testing should not be repeated and further HB immunization is not needed, with the exception of immunocompromised persons and persons with chronic renal disease or on dialysis."

[11] National Advisory Committee on Immunization (NACI) Canadian Immunization Guide, Evergreen Edition, Public Health Agency of Canada. Online: https://www.canada.ca/en/public-health/services/canadian-immunization-guide.html

b. "If testing for anti-HBs is conducted 1 to 6 months after vaccination and anti-HBs titre is less than 10 IU/L, the worker should be given a second HB vaccine series, followed by post-immunization serologic testing."

c. "If testing for anti-HBs is conducted more than 6 months after vaccination and anti-HBs titre is less than 10 IU/L, the worker should be given 1 booster dose of HB vaccine, followed by post-immunization serologic testing. If an anamnestic response following the booster dose is absent, a second HB vaccine series should be given followed by post-immunization serologic testing."

d. "Workers who have documented evidence of failure to respond to 2 series of HB vaccine (individuals in whom an adequate anti-HBs titre is not demonstrated) are unlikely to benefit from further immunization and will need passive immunization after potential exposure to HB."

6. Minimal spacing between doses

Minimal spacing between hepatitis B immunizations must be respected. For a three-dose hepatitis B adult immunization schedule ideally doses should be given at time 0, 1 month and 6 months, with at least one month between dose #1 and #2, two months between dose #2 and #3, and four months between dose #1 and #3. For the minimal spacing of 2-dose and 4-dose hepatitis B immunization series, refer to the Canadian Immunization Guide.

7. Sharing hepatitis B serological records with students

All students should be provided a personal copy of their hepatitis B serological test results, so that these are readily available if a student undergoes a post-exposure assessment; this is particularly important for students who may be travelling to an external placement site.

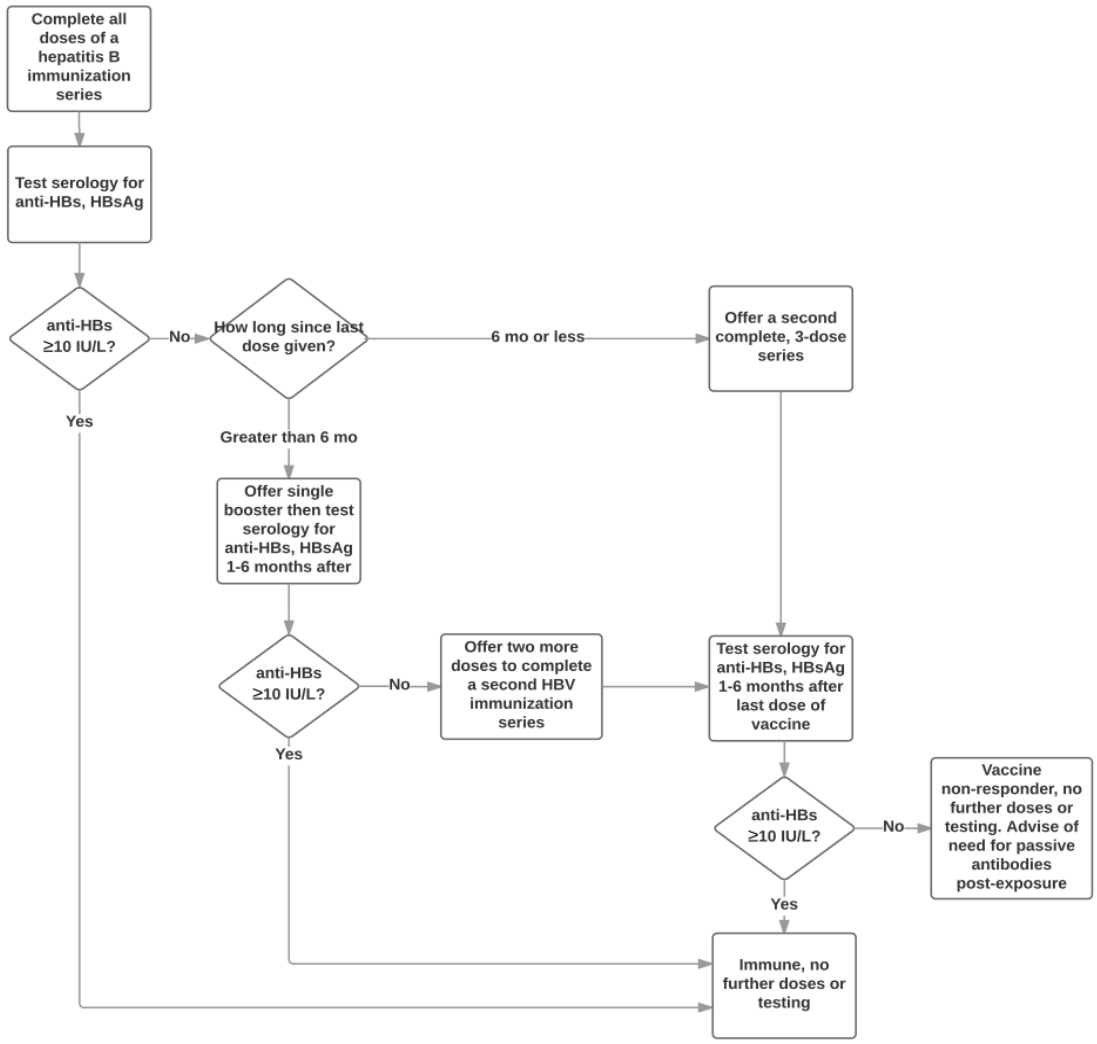
Table 2: Hepatitis B Vaccines

Recipients	Vaccine														
	Monovalent hepatitis B						DTaP-HB-IPV-Hib			HAHB					
	RECOMBIVAX HB®			ENGERIX®-B			INFANRIX hexa™			TWINRIX®			TWINRIX® Junior		
	µg HBsAg	mL	Schedule §	µg HBsAg	mL	Schedule §	µg HBsAg	mL	Schedule §	µg HBsAg	mL	Schedule §	µg HBsAg	mL	Schedule §
Infants and children															
Infants less than 6 months of age born to HB-negative mothers	5	0.5†	0, 1, 6**	10	0.5	0, 1, 6 or 0, 1, 2, 12	10	0.5	Months of age: 2, 4, 6, 12-23 or 2, 4, 6 or 2, 4, 12-23	Not indicated			Not indicated		
Infants of HB-positive mothers†	5	0.5	0, 1, 6**	10	0.5	0, 1, 6 or 0, 1, 2, 12	Not indicated before 6 weeks of age			Not indicated			Not indicated		
6 months to less than 24 months of age ∑	5	0.5†	0, 1, 6**	10	0.5	0, 1, 6 or 0, 1, 2, 12	10	0.5	Months: (1st dose = month 0) 0, 2, 4, 10-21 or 0, 2, 4 or 0, 2, 10-21	20	1.0	0, 6-12	10	0.5	0, 1, 6
24 months to less than 11 years of age	5	0.5†	0, 1, 6**	10	0.5	0, 1, 6 or 0, 1, 2, 12	May be given to children aged 24 months to less than 7 years, if necessary			20	1.0	0, 6-12	10	0.5	0, 1, 6
11 to less than 16 years of age	10	1.0	0, 4-6	20	1.0	0,6	Not indicated			20	1.0	0, 6-12	10	0.5	0, 1, 6
	5	0.5	0, 1, 6**	10¥	0.5	0, 1, 6 or 0, 1, 2, 12									
16 to less than 19 years of age	5	0.5	0, 1, 6**	10	0.5	0, 1, 6 or 0, 1, 2, 12	Not indicated			Not indicated			10	0.5	0, 1, 6
Dialysis, chronic renal failure and some immunocompromised ^ children, less than 16 years of age	double the µg dose for healthy child of same age		0, 1, 6 or 0, 1, 2, 12	double the µg dose for healthy child of same age		0, 1, 6 or 0, 1, 2, 12	Not indicated			Not indicated			Not indicated		
Dialysis, chronic renal failure and some immunocompromised^ 16 to less than 20 years of age	double the µg dose for healthy individual of same age		0, 1, 6 or 0, 1, 2, 12	40	2.0	0, 1, 2, 6	Not indicated			Not indicated			Not indicated		
Adults															
19 years of age	5	0.5	0, 1, 6**	10	0.5	0, 1, 6 or 0, 1, 2, 12	Not indicated			20	1.0	0, 1, 6 or 0, day 7, day 21, month 12	Not indicated		
20 years of age and older	10	1.0	0, 1, 6**	20	1.0	0, 1, 6 or 0, 1, 2, 12 or 0, day 7, day 21, month 12	Not indicated			20	1.0	0, 1, 6 or 0, day 7, day 21, month 12	Not indicated		
Dialysis, chronic renal failure and some immunocompromised ^ 20 years of age and older	40 (adult dialysis formulation)	1.0	0, 1, 6**	40	2.0	0, 1, 2, 6	Not indicated			Not indicated			Not indicated		

§ months: 1st dose = month 0
† Following the review of Recombivax HB® vaccine immunogenicity and safety data, the National Advisory Committee on Immunization (NACI) is now recommending the provision of a full dose (0.5ml / 5 microgram) to all children of HB-negative mothers who are less than 11 years of age. This change will harmonize dosing schedules and reduce vaccine wastage. Infants and children less than 11 years of age who were immunized with a complete series using the previously recommended 0.25mL dosage do not require revaccination.
** Although a schedule of months 0, 1 and at least 2 is authorized, the preferred schedule is months 0, 1 and 6.
† For post-exposure immunization of infants born to HB-infected mothers, refer to Post-exposure immunization. Premature infants (less than 37 weeks and weighing less than 2,000 grams) of HB-infected mothers, require 4 doses of HB vaccine.
∑ For pre-exposure immunization, persons 6 months of age and older may be immunized with HAHB vaccine, if indicated
¥ The manufacturer recommends the standard adult dosage (20 µg/1.0 mL) using a two dose schedule if it is unlikely that there will be compliance with the three or four dose schedule.
^ Immunocompromised defined as: congenital immunodeficiency, hematopoietic stem cell transplant, solid organ transplant, HIV-infected.

Data transcribed from: Table 3: Recommended Dosages and Schedules for Hepatitis B-Containing Vaccines, Page 7: Canadian Immunization Guide: Part 4 - Active Vaccines, accessed 25 November 2018.

Figure 1: Hepatitis B Immunization Algorithm



NOTE: When following the above algorithm, if a test for HBsAg was recently conducted and is negative, and if there have been no high-risk exposures in the interim, subsequent tests for HBsAg may be omitted at the discretion of the clinician.

XIV. Influenza
(Section I on the Form)

1. Requirements

Several medical schools (listed below) require visiting students to obtain an up-to-date seasonal influenza immunization for electives occurring during influenza season, defined as November to June inclusive; all other medical schools strongly recommend influenza vaccination. Influenza vaccine can continue to be received right up to the date of the expiry of the vaccine (typically the end of June).

2. Types of influenza vaccines

There are several different influenza preparations available in Canada, and others available in different countries. This includes trivalent inactivated influenza vaccine (TIV), quadrivalent inactivated influenza vaccine (QIV), and live attenuated influenza vaccines (LAIV). TIV and QIV are recommended over LAIV for health care workers. This is because TIV and QIV are likely more efficacious in adults compared to LAIV, and also due to the theoretical risk of transmitting a vaccine-type virus to an immune compromised client when LAIV is used.[12] However, any type of influenza vaccine preparation will be accepted for a visiting elective student.

The following appears on the Form (page 5):

	Date	HCP Initials
Current seasonal influenza vaccine		

An up-to-date seasonal influenza immunization is required for electives occurring during November to June inclusive for the following medical schools: **Dalhousie University, McGill University, McMaster University, Memorial University, Northern Ontario School of Medicine, Queen's University, University of Manitoba, University of Ottawa, University of Toronto,** and **Western University.** The **University of British Columbia** requires either a documented influenza immunization or a mask be worn for electives November to June inclusive. All other universities highly recommend influenza immunization.

If vaccine is not currently available document the immunization once vaccine becomes available (typically mid-October) and resubmit this updated form to applicable schools. Students applying to **McMaster University** do not need to resubmit this form; provide documentation of the current seasonal influenza immunization directly to the McMaster placement site.

[12] Canadian Immunization Guide Chapter on Influenza and Statement on Seasonal Influenza Vaccine for 2018-2019; An Advisory Committee Statement (ACS) National Advisory Committee on Immunization (NACI); May 2018. Available online: https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-statement-seasonal-influenza-vaccine-2018-2019.html

Appendix A: Exceptions and Contraindications to Immunizations and Testing, Self-Declaration Form

Note: If an appendix is not needed it does not need to be submitted with an application.

This box is to be completed by the student:

This section applies only to students who are UNABLE to meet any of the requirements listed in this document due to a medical or health condition (not including a contraindication to tuberculin skin testing).

My signature below indicates the following:

- I acknowledge that I may be inadequately protected against the following infectious disease(s):

  _____

- I acknowledge that in the event of a possible exposure, passive immunization or chemoprophylaxis may be offered to me for the infectious disease(s) listed above (if appropriate).
- I acknowledge that in the event of an outbreak of (one or more of) the infectious disease(s) listed above, I may be excluded from clinical duties for the duration of the outbreak.
- I acknowledge that I might be required to take additional precautions to prevent transmission such as wearing a surgical mask.

_____
Student Name

_____
Signature

_____
Date (yyyy-mm-dd)

Appendix B: Tuberculosis Awareness, and Signs and Symptoms Self-Declaration Form

Note: If an appendix is not needed it does not need to be submitted with an application.

This box is to be completed by the student:

This section applies only to students with ONE OR MORE of the following:

- A positive tuberculin skin test (TST);
  AND/OR
- A positive interferon gamma release assay (IGRA) blood test
  AND/OR
- Previous diagnosis and/or treatment for tuberculosis (TB) disease
  AND/OR
- Previous diagnosis and/or treatment for TB infection
  AND/OR
- Students who may have had a significant exposure to infectious TB disease (defined in **Section F**)

I acknowledge the following:

(1) Sometimes an individual with TB infection may progress to active (infectious) TB disease. I acknowledge that this can happen even for individuals who have normal chest X-rays, and for those who were successfully treated for active TB disease or latent tuberculosis infection in the past.

(2) Possible TB disease includes one or more of the following *persistent* signs and symptoms:

- Cough lasting three or more weeks
- Hemoptysis (coughing up blood)
- Shortness of breath
- Chest pain
- Fever
- Chills
- Night sweats.
- Unexplained or involuntary weight loss

(3) I have a professional duty to obtain a prompt assessment from a clinician if I develop signs and symptoms of possible TB disease.

Do you have any of the symptoms in the above list?

☐ **No** I do not have any of the above symptoms at the present time

☐ **Yes** I have the following symptoms (also attach correspondence from a clinician explaining the symptoms): _____

_____

_____
Student Name

_____
Signature

_____
Date (yyyy-mm-dd)

Appendix C: Explanation of Radiographic Findings

Note: If an appendix is not needed it does not need to be submitted with an application.

This form must be completed by a physician who has assessed a student with abnormalities of the lung or pleura noted on a chest X-ray report, with the chest X-ray report attached (alternatively it is acceptable to attach a letter or form from a physician, tuberculosis clinic, or other specialized clinic covering the following items).

☐ Chest X-ray report attached

Name of student: _____

Reason chest X-ray was obtained: _____

_____

_____

Explanation for abnormal findings: _____

_____

_____

Given the abnormal findings, does the student pose a risk to others by participating in clinical duties?

_____

_____

_____

Physician Name: _____

Address: _____ Tel: _____

Signature: _____ Date (yyyy-mm-dd): _____

Appendix D: Hepatitis B Vaccine Non-Immune Self-Declaration Form

Note: If an appendix is not needed it does not need to be submitted with an application.

This box is to be completed by the student:

This section applies only to students who either:

- are still in the process of completing a **documented** hepatitis B immunization series

  OR

- have received two complete, **documented** hepatitis B immunization series, and post-immunization serology has not demonstrated immunity (i.e., anti-HBs remains less than 10 IU/L) [13].

  For a student who has failed to respond to two immunization series, it is important to ensure (1) that each immunization series was documented, all doses were provided, and that minimal spacing between doses were respected; and (2) that post-immunization serology was conducted **between 28 days and six months** after the final dose of the series to be considered reliable. For such students generally no further pre-exposure hepatitis B immunizations or serological testing are required.

My signature below indicates the following:

- I acknowledge that there is no laboratory evidence that I am immune to hepatitis B.
- I acknowledge that in the event of a possible exposure to hepatitis B (e.g., a percutaneous injury, human bite, or mucosal splash) I need to report the injury to my supervisor as soon after the incidence as possible as I may need passive immunization with hepatitis B immune globulin (efficacy decreases significantly if given more than 48 hours after the exposure).

_____
Student Name

_____
Signature

_____
Date (yyyy-mm-dd)

[13] Dalhousie University uses an anti-HBs titre threshold of 12 IU/L as indicative of hepatitis B immunity.