



Recommendations for Immunizations and TB Testing for Health Science Students

Overview

Influenza: 1 dose of inactivated Influenza vaccine yearly.

Hepatitis B: 3-dose series of hepatitis B vaccine given at 0, 1 and 6 months **AND** documented quantitative hepatitis B surface antibody titer consistent with immunity after the appropriate vaccine series.

Measles/Mumps/Rubella (MMR): 2 doses of MMR vaccine at least 28 days apart after 12 months of age **OR** 2 doses of measles **and** 2 doses of Mumps at least 28 days apart after 12 months of age **and** one dose of rubella after 12 months of age **OR** laboratory proof of immunity to measles/mumps/rubella.

Tetanus/Diphtheria/Pertussis: In addition to primary series, all Health Care Personnel (HCP) should receive 1 dose of Tdap and have documentation of a Td or Tdap within the past 10 years.

Tuberculosis Testing: The CDC recommends initial base line testing with a 2-step TB skin test or a blood test for TB infection. Subsequent annual or serial screening is determined by state regulations or risk assessment.

Varicella: 2 doses of varicella vaccine given at least 4 weeks apart **OR** laboratory proof of immunity for those with a history of disease. If titer is negative or equivocal, give 2-dose varicella vaccine series. Do not repeat titer after series completion.

Hepatitis B:

Students must have a series of 3 hepatitis B vaccines **AND** a positive (≥ 10 mIU/mL) serological quantitative Hepatitis B surface antibody titer (anti-HBs or HBsAb) that was performed at least 1-2 months after the 3rd dose of hepatitis B vaccine. A positive titer without documentation of the 3 shot series will not be accepted.

For students with remote history of documented vaccine series completion without titer:

Draw anti-HBs titer upon matriculation

- If the anti-HBs titer is negative or equivocal, administer 1 dose of hepatitis B vaccine (#4) and re-titer at least 1-2 months after the dose.
- If the second anti-HBs titer is negative, the student will get 2 additional hepatitis B vaccines (#5 and #6) at 1 month and 6 months following dose #4. Students should pay particular attention to the date ranges in between the 3 hepatitis B vaccine doses to ensure that they are given at the appropriate time intervals for compliance.
- A final anti-HBs titer should be performed 1-2 months after the 3rd vaccine (dose #6) in the repeated hepatitis B series.
- If the student has received 2 complete series of hepatitis B vaccine (6 doses total) and does not have a positive anti-HBs titer, they are considered a "non-responder" and must be evaluated by student health personnel for further evaluation and recommendations.
- HCP who are non-responders should be considered susceptible to hepatitis B infection and should be counseled about precautions to prevent HBV infection and the need to receive hepatitis B Immunoglobulin upon exposure to hepatitis B surface antigen positive (HBsAg) blood or fluids or blood or fluids with unknown HBsAg status. Non-responders should also be tested for HBsAg to evaluate for chronic hepatitis B infection. HCP who are chronic hepatitis B carriers should be counseled as to local and state guidelines for the safe provision of healthcare.

For unvaccinated HCP students or those with recent history of documented vaccine completion

Administer a 3-dose series of hepatitis B vaccine at 0, 1, and 6 months **AND** perform anti-HBs titer 1-2 months after dose #3 to document immunity.

- If anti-HBs is greater than or equal to 10 mIU/ml, the HCP is considered immune and no further testing or vaccination is recommended
- If the anti-HBs titer is less than 10 mIU/ml, the student should receive 3 additional doses of vaccine per the usual schedule of 0, 1, and 6 months, and a repeated titer should be performed 1-2 months after dose #3.

Influenza:

It is strongly recommended that all healthcare personnel receive the influenza vaccine yearly and many clinical sites require it as a condition of rotation for students.



Measles/Mumps/Rubella:

Students must meet any of the following 3 options to meet the measles, mumps, and rubella (MMR) vaccine requirement:

1. 2 doses of MMR vaccine at least 28 days apart after 12 months of age.
2. 2 doses of measles vaccine **and** 2 doses of mumps vaccine at least 28 days apart after 12 months of age **and** 1 dose of rubella vaccine after 12 months of age
3. Laboratory proof of immunity (blood titer) to measles, mumps and rubella. If titers are negative or equivocal, the student will receive the MMR series with at least 28 days between each dose. No titer is required after the MMR vaccine series.

Tetanus/Diphtheria/Pertussis:

Students must have had 1 dose of Tdap, the tetanus/diphtheria/pertussis vaccine (brand name Adacel or Boostrix). If the student does not have documentation of receiving a Tdap vaccine or is unsure if they have received it, a Tdap vaccine should be administered as soon as feasible without regard to the interval since the previous dose of Td. A Td booster or a Tdap is required within 10 years prior to matriculation.

Tuberculosis Screening

Upon matriculation, health science students should undergo baseline testing for tuberculosis with either a 2-step Tuberculin Skin Test or a blood test for TB infection (Interferon Gamma Release Assay, IGRA)

Tuberculin Skin Test (TST) – 2-Step

Initial repeat testing is recommended for persons with a negative TST who are to undergo periodic TST screening and who have not been tested with tuberculin recently (within 1 year). This is intended to avoid “booster phenomenon” a misclassification of a subsequently reactive TST after initial testing as a TST conversion indicating recent infection.

- The criteria for positivity is based on risk factors. HCP are at intermediate risk.
- Individuals who have received the BCG vaccine should have their results interpreted according to standard criteria
- 2-Step TST is performed by intradermal injection of PPD (purified protein derivative) with the student returning in 48-72 hours to record induration and interpreted according to risk factors. If negative, a second TST is placed on the opposite forearm 7-21 days after initial negative results and the results are interpreted in the standard fashion
- If the repeat TST is positive, this is a true positive result and the student should be evaluated for latent or active TB.

IGRA

- CDC now endorses IGRA for initial screening and surveillance of HCP
- Two tests are available, Quantiferon Gold and T-spot
- Do not require a second patient visit
- Considered as sensitive as TST but more specific
- IGRA preferred to TSTs in persons who have received BCG or who are unlikely to return for a test reading in 48-72 hours

Serial Testing

- Utilize same testing methodology TST or IGRA

Utilize same brand of IGRA for serial testing

Varicella:

Students must have either 1 of the following 2 options to meet the varicella vaccine requirement:

1. 2 documented varicella vaccines that were given at least 4 weeks apart.
2. Laboratory proof of immunity (blood titer) to varicella. If the varicella titer is negative or equivocal, the student will receive the varicella series with the doses at least 4 weeks apart. No titer is required after the varicella vaccine series.

An affidavit or documentation of the student having had varicella disease (i.e., chicken pox or shingles) will not be accepted for any Health Science Student.



Health and Mortuary Science Immunization Record (Including Early Childhood)

Student Name: _____ ID#: _____

Tetanus/Diphtheria/Pertussis: 1 dose of adult Tdap. If last Tdap is more than 10 years old, provide date of last Td and Tdap.

	Mo./day/year	Mo./day/year	Mo./day/year	Mo./day/year
Td				

Tdap booster **Must have one documented	Mo./day/year			
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Measles/Mumps/Rubella: 2 doses of MMR at least 28 days apart after 12 months of age OR 2 doses of Measles and 2 doses of Mumps at least 28 days apart after 12 months of age and 1 dose of Rubella after 12 months of age OR laboratory proof of immunity (blood titer) to measles/mumps/rubella. If titers are negative or equivocal, administer MMR series with doses at least 28 days apart. No titer is required after series completion.

MMR - 2 required on or after 1st birthday	(#1) Mo./day/year	(#2) Mo./day/year		
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OR

Measles 2 required on or after first birthday	(#1) Mo./day/year	(#2) Mo./day/year		
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Mumps 2 required on or after first birthday	(#1) Mo./day/year	(#2) Mo./day/year		
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Rubella 1 required on or after first birthday	Mo./day/year			
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OR

MMR Titer *must attach laboratory results	Date of Titer	Result		
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Varicella: 2 doses of Varicella at least 4 weeks apart OR laboratory proof of immunity to varicella. If titer is negative or equivocal, administer Varicella series with doses at least 4 weeks apart. No titer is required after series.

Varicella 2 doses	(#1) Mo./day/year	(#2) Mo./day/year		
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OR

Varicella Titer *must attach laboratory results	Date of Titer	Result		
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Hepatitis B: 3 doses of hepatitis B vaccines and a positive (≥ 10 mIU/mL) serological quantitative hepatitis B surface antibody titer (HBsAb) 1-2 months after the date of the last vaccine is considered proof of lifelong immunity. If series was completed in the remote past, and if the titer checked upon matriculation is negative, student will get 1 hepatitis B vaccine dose (#4) and re-titer at least 1-2 months after vaccine. If the second titer is negative, student will get 2 additional hepatitis B vaccines (#5 and #6) per the standard schedule. A final titer should be done 1-2 months after the 6th vaccine and if this is negative, the student should be considered a non-responder and evaluated and counseled appropriately.

Those students recently vaccinated with a negative titer after the 3rd dose can receive a second series with a re-titer 1-2 months after the 6th dose. Non-responders should be counseled and evaluated appropriately.

Hepatitis B Series 3 doses required	(#1) mo./day/year	(#2) mo./day/year	(#3) mo./day/year	
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Hepatitis B Quantitative Titer *must attach laboratory results	Date of Titer	Result		
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Hepatitis B Series Repeat	(#1) mo./day/year	(#2) mo./day/year	(#3) mo./day/year	
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Hepatitis B <u>Quantitative</u> Titer Repeat *must attach laboratory results	Date of Titer	Result		
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Tuberculin Skin Test (TST): 2 TSTs placed within the last 12 months within the United States. The 2nd TST must be placed at least 1 week AFTER the 1st TST read date.

2 Step TST placed within the past 12 months	1 st TST Place date	1 st TST Read Date	2 nd TST Place Date	2 nd TST Read date
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OR

IGRA TB Screening *must attach laboratory results ___ T-Spot ___ Quantiferon Gold	Date of IGRA	Result		
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