

Recommended lab tests and related specimens for confirmation of selected vaccine-preventable diseases.

Many VPD lab tests are available through MDHHS Bureau of Laboratories for purposes of public health actions and follow-up. Contact MDHHS Division of Immunization to discuss or arrange: 517-335-8159 (if unable to reach, contact MDHHS Bureau of Laboratories, Division of Infectious Disease at 517-335-8067). More info is available in the [MDHHS Lab Services Guide](#).

Note: VPD lab services indicated here are for diagnostic and public health-related activities. MDHHS Bureau of Laboratories offers separate immune status testing on a fee-for-service basis for health care workers and medical/nursing/allied health students; call 517-241-5583 for more information.

Disease	Recommended Test(s)	Specimen(s)	Timing for specimen collection	Comments	Testing logistics & considerations
Diphtheria	Culture and PCR (through CDC only)	Nose or throat swab, diphtheritic membrane	ASAP	Biotyping and Toxigenicity testing (Elek test) should be done on isolates	Specimens should be sent to MDHHS, to be forwarded to CDC after consulting with CDC.
H. flu invasive disease	Culture; In cases < 15 years, save and forward the isolate to MDHHS for serotyping.	Isolates from normally sterile sites: (CSF, blood, joint fluid, pleural effusion, pericardial effusion, peritoneal fluid, subcutaneous tissue fluid, placenta, and amniotic fluid)	Any time after symptoms.	Hib Antigen testing is an adjunct to culture; if positive for CSF , case is considered Probable. Not reliable for serum and urine, or other specimens.	MDHHS lab does serotyping

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Disease	Recommended Test(s)	Specimen(s)	Timing for specimen collection	Comments	Testing logistics & considerations
Measles	Serology: Measles IgM (or paired IgG) AND: Additional: Culture or PCR specimen	Serum. Throat swab recommended; urine also (alternates: NP aspirate, heparinized blood).	At clinical presentation. If IgM neg. on serum collected <72 hours after rash onset, repeat IgM on serum collected >72 hours after rash onset. If doing paired IgG, collect convalescent sera 10-30 after acute. Throat swab and urine: Within 7 days of rash onset.	Also test for rubella IgM. Important to collect serum <u>and</u> viral swab (throat) and/or urine specimen.	Can be done through MDHHS (uses CDC direct capture EIA test; commercial labs can also do using other EIA methodologies PCR and/or culture usually done at CDC. Measles viral isolates cultured elsewhere should be sent to CDC for further characterization.
Meningococcal Disease	Culture PCR	Isolation of <i>N. meningitidis</i> from a normally sterile site (egs. blood, CSF, joint, pleural, or pericardial fluid)	Any time after symptoms.	PCR methods may be able to identify organism DNA in samples from which the organism did not grow on culture.	Ensure serogrouping of isolate; MDHHS lab is able to perform serogroup assay.

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Mumps	Serology: Mumps IgM or paired IgG, or both. AND: Additional: Culture or PCR specimen	Serum Swab of buccal mucosa near parotid salivary gland duct (opposite upper molars) or duct of other affected salivary gland (i.e. near swelling). Massage affected area (eg. Exterior cheek) for 30 seconds before swabbing.	At time of clinical diagnosis. If doing paired IgG, convalescent 2 weeks after acute. ASAP after parotitis onset, up to 9 days after.	IgM in previously vaccinated persons may be absent, delayed, or transient, so if negative recommend repeat IgM on convalescent serum <u>and</u> pairing it with acute for paired mumps IgG assay. (IgM may be negative in up to 50-60% of acute serum samples among patients who have been previously immunized, so a case in a vaccinated person should not be ruled out on the basis of a negative IgM)	Can be done through MDHHS (may send to CDC for mumps IgM). Mumps IgM tests are available commercially but none are FDA approved. MDHHS can do paired IgG MDHHS does mumps PCR testing
Pertussis	Culture, PCR	Posterior nasopharyngeal swab (not throat) or aspirate	Within 2 weeks of cough onset.	Use Dacron/ synthetic or calcium alginate swab (not cotton) for culture; use Dacron/synthetic for PCR (do not use cotton or calcium alginate for PCR).	Pertussis culture and PCR tests are available commercially. MDHHS offers PCR for public health-related case finding, outbreak investigation
Polio	Viral Culture; paired serology.	Stool; throat swab. Collect 2 of each, 24 hours apart. Serum	Stool and throat: As early as possible in the course of the illness. Collect acute serum, then convalescent serum ≥3 weeks later.	Public health emergency; call MDHHS and CDC.	

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Rubella	Serology Rubella IgM (or paired IgG) AND: Additional: Culture/PCR specimen	Serum. Throat swab recommended (alternates: urine, CSF, blood, nasal specimens).	At clinical presentation. If IgM is negative on serum collected < 5 days after rash onset, repeat IgM on a serum obtained ≥ 5 days after rash onset. Consider paired IgG testing; convalescent serum 2-3 weeks after acute. Within 2 weeks of rash onset	Also test for measles IgM Important to collect serum <u>and</u> viral swab specimen.	Can be done at MDHHS; commercial labs can also do. PCR and/or culture usually done at CDC. Rubella viral isolates cultured elsewhere should be sent to CDC for further study.
Tetanus	None	None	Not applicable	Diagnosis is clinical	
Varicella	PCR - *method of choice DFA	Vesicular fluid by swabbing base of vesicle; scabs, or lesion crusts. Swab or scraping from base of fresh vesicle	2-3 days after rash onset	Lab confirmation now recommended for all suspected cases of chickenpox (varicella).	Not available at MDHHS (but can be sent out to CDC); Testing is available commercially in clinical laboratories.