

Testing Guidelines

*Public Health Laboratories
Public Health Ontario*

February 2012

Testing Guidelines

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Acanthamoebae <i>Acanthamoeba spp.</i>	P02	Corneal scrapings (several in normal saline), contact lens cases and fluid	Sterile container	Microscopy, culture	Parasitology	7 days	Within 7 days	Consult the Parasitology Laboratory 416-235-5722 or your local Public Health Laboratory, prior to submitting specimens for culture.
	P03	Cerebrospinal fluid (CSF)	Sterile container	Microscopy, culture	Parasitology	7 days	Within 7 days	
Actinomycetoma <i>Actinomyces israelii</i> <i>Actinomyces spp.</i>		Pure culture only	Appropriate agar medium	Identification & susceptibility (Isolate from systemic site only)	Reference Identification and Susceptibility	NA	Susceptibility testing: 2 days.* Identification: 5-21 days dependent on organism(s).	Serology is not available * Susceptibility testing is not reported until the organism has been confirmed as an anaerobe.

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Adenovirus Infections (Adenovirus – over 41 antigenic types)	V01	Throat swab, nasopharyngeal swab	Virus respiratory	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	
		Conjunctival swab	Virus respiratory	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	
		Faeces	Virus Enteric	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	Culture on faeces performed April 15 th – December 14 th ; EM only performed December 15 th – April 14 th . Refrigerate specimen if transport delayed.
				Electron Microscopy		3 days		
	Autopsy material	Virus Culture Kit (Tissue)	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days		
Amoebic Dysentery / Amoebiasis <i>Entamoeba histolytica/dispar</i>	P04	Faeces in SAF preservative	Para	Microscopy	Parasitology	3 days	Within 3 days	Collect faeces in clean, dry container and emulsify faeces in SAF preservative immediately after collection.
	P02	Faeces, unpreserved	Sterile bottle	ELISA	Parasitology	5 days	Within 5 days	
	P03	Aspirated material from edge or base of abscess in liver, skin, bowel, etc.; autopsy material in SAF preservative	See notes		Parasitology	3 days	Within 3 days	Consult Parasitology at 416-235-5722 or your local Public Health Laboratory before collecting specimen.
	S06	Blood, clotted or serum	BL-S	EIA, IHA	Immunodiagnosics	7 days	Within 7 days	

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Amoebic Encephalitis Primary <i>Naegleria</i> spp. <i>Acanthamoeba</i> spp.	P03	Cerebrospinal fluid (CSF)	Sterile container	Microscopy, culture	Parasitology	3 days	Within 3 days	Consult Parasitology at 416-235-5722 or your local Public Health Laboratory before collecting specimen.
	P03	Brain/meningeal biopsy	Sterile container	Microscopy, culture	Parasitology	3 days	Within 3 days	
Amoebic Hepatitis <i>Entamoeba histolytica</i>	P03	Abscess wall suction (NOT PUS) in SAF preservative	Para	Microscopy	Parasitology	3 days	Within 3 days	Emulsify abscess material in SAF preservative immediately after collection
		Abscess, unpreserved	Sterile container	Microscopy	Parasitology	7 days	Within 7 days	
	S06	Blood, clotted or serum	BL-S	EIA	Immunodiagnosics	7 days	Within 7 days	
Angiostrongyliasis	P03	Cerebrospinal fluid (CSF)	Sterile container	Microscopy	Parasitology	3 days	Within 3 days	
	P03	Autopsy material (Brain), surgical or other biopsy material	Para	Microscopy	Parasitology	3 days	Within 3 days	Consult Parasitology at 416-235-6315 before collecting specimen.
	S06	Blood, clotted or serum	BL-S	EIA	Immunodiagnosics Referred to CDC, Atlanta, Georgia.	NA	NA	
Anisakiasis	P02	Biopsy material (worm/larva)	Sterile container with saline	Microscopy – identification of worm / larva	Parasitology	3 days	Within 3 days	Consult Parasitology at 416-235-6315.

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Anthrax <i>Bacillus anthracis</i>	* Ref. ID							Consult Medical Microbiologist at 416-235-5841 or your local Public Health Laboratory prior to specimen collection. *Use Reference ID Requisition (Green).
Antibiotic Susceptibility of a Bacterial Isolate	B01	Pure culture	Appropriate agar medium	Susceptibility testing Minimum inhibitory concentration (MIC)	Reference Identification and Susceptibility	NA	2 days.*	Consult Susceptibility Testing at 416-235-5706 or your local Public Health Laboratory. MIC for fastidious organisms and in specific situations. * Susceptibility testing is not reported until the organism identification has been confirmed.
Arbovirus Infections Eastern, Western, , Dengue fever, St. Louis encephalitis, Powassan	V02	Blood, clotted or serum	BL-S	Virus serology	WRAPS	10 days	Within 10 days	Consult Medical Microbiologist at 416-235-5766 or your local Public Health Laboratory for any other specimen. Submit full travel history, any clinical information and any history of tick or mosquito bite.
Yellow Fever	V02			Immunity				
	V09			Diagnosis				
Venezuelan encephalitis Ross River Chikungunya	V02			Virus serology	Referred to NML Winnipeg, MB.			

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Arthropod Infestation (mites, ticks, bedbugs, fleas, flies)	P02	Arthropod in question	Clear container	Microscopy	Parasitology	2 days	2 days	Please supply form Parasitology Patient's History form (F-C-PA-027) for any specimens.
Ascariasis <i>Ascaris lumbricoides</i>	P04	Faeces in SAF preservative	Para	Microscopy	Parasitology	3 days	Within 3 days	
	P02	Adult worm (passed in vomit or faeces)	Sterile container with normal saline	Microscopy	Parasitology	2 days	Within 2 days	
	S06	Blood, clotted or serum	BL-S	EIA	Immunodiagnosics	7 days	Within 7 days	
Aspergillosis (Invasive)	S05	Blood, clotted or serum	BL-S	Immuno-diffusion	Immunodiagnosics	7 days	Within 7 days	
Astrovirus Infections Astrovirus	V06	Faeces	Sterile container	Electron Microscopy	Virus Detection	3 days	Within 3 days	If transportation is delayed, refrigerate at 4°C.
Avian Flu	V23	Nasopharyngeal aspirate/swab	Virus-Resp	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	Contact the local Health Unit and Head, Virus Detection at 416-235-5730 prior to submitting specimen. Submit travel history and clinical information.
				Direct antigen Detection (Flu A, B)		1 day		

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				rRT-PCR	Molecular Diagnostics	1 day	Preliminary 1 day, confirmation sent to NML, Winnipeg, MB.	
Avian Flu (continued)	V23	Bronchial wash	Sterile container	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	Contact the local Health Unit and Head, Virus Detection at 416-235-5730 prior to submitting specimen.
				rRT-PCR	Molecular Diagnostic	1 day	Preliminary 1 day, confirmation sent to NML, Winnipeg, MB.	
		Faeces (gastroenteritis present)	Sterile container	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	Submit travel history and clinical information.
				rRT-PCR	Molecular Diagnostics	1 day	Preliminary 1 day, confirmation sent to NML, Winnipeg, MB.	
		Blood, clotted or serum	BL-S	Serology	Referred to NML, Winnipeg, MB. Contact Dr. Yan Li at 204-789-6045.			Convalescent sample may be requested, depending on the Influenza A and B serology results.

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Avidity Testing					WRAPS			Consult section Head Technologist at 416-235-6044, prior to requesting test.
West Nile					Referred to NML, Winnipeg, MB.			Contact Dr. M. Drebot at 204-789-6059
Rubella					Referred to NML, Winnipeg, MB.			Contact Dr. Graham Tipples at 204-789-6080
Babesiosis <i>Babesia</i> spp.	P03	Unstained blood slides, thick and thin	Slide mailer	Microscopy	Parasitology	2 days	2 days	
	S06	Blood, clotted or serum	BL-S	IFA	Immunodiagnostics Referred to the National Reference Centre for Parasitology, Montreal, Quebec			
Bacterial Cultures for Identification	* Ref. ID	Pure culture (aerobic / anaerobic)	Appropriate agar medium	Identification and antibiotic susceptibility	Reference Identification and Susceptibility	N/A	Susceptibility testing: 2 days.** Identification: 5-21 days dependent on organism(s).	*Use Reference ID Requisition (Green). ** Susceptibility testing is not reported until the organism has been identified upto Genus level. In some cases, complete identification is required.

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Bacterial Vaginosis (BV)	B12	Vaginal smear	Slide mailer	Microscopy	STI	2 days	2 days	
Balantidiasis <i>Balantidium coli</i>	P04	Faeces in SAF preservative	Para	Microscopy	Parasitology	3 days	Within 3 days	Emulsify faeces in SAF preservative immediately after collection.
	P03	Scrapings from ulcerated bowel	Para	Microscopy	Parasitology	3 days	Within 3 days	
Bartonellosis Cat Scratch Disease	* Ref. ID	Lymph nodes, skin lesions, tissue and bone marrow	See notes**		Reference Identification & Suceptibility	7 days	Within 7 days	**Consult Medical Microbiologist at 416-235-5841 or your local Public Health Laboratory before collecting specimen. *Use Reference ID Requisition (Green).
	S01	Blood, clotted or serum	BL-S	IFA	Immunodiagnosics	7 days	Within 7 days	
Botulism <i>Clostridium botulinum</i>				Not available at the OPHL.	Call the Botulism Reference Centre at 613-957-0902 or see web site http://www.phac-aspc.gc.ca			

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Bronchiolitis of Infants (Viral)	V42	Nasopharyngeal swab, throat swab	Virus Respiratory	Virus Isolation,	Virus Detection	Preliminary 7 days	Within 10 days	
				Direct antigen testing (RSV)		1 day	1 day	
		Auger suction; aspirate	Original collection vial/tube	Virus isolation,	Virus Detection	Preliminary 7 days	Within 10 days	
				Direct antigen testing (RSV)		1 day	1 day	
Brucellosis <i>Brucella abortus</i> <i>B.melitensis, B.suis</i>	* Ref. ID	See notes			Reference Identification & Susceptibility			Consult Medical Microbiologist at 416-235-5841 or your local Public Health Laboratory. *Use Reference ID Requisition (Green).
	S04	Blood, clotted or serum	BL-S	Agglutination	Immunodiagnosics	7 days	Within 7 days	
B-Virus Infection Herpes virus simiae, (B-Virus)		Blood, clotted or serum (See Notes)	BL-S	There is a charge for this test.	WRAPS Referred to National Institute of Health, Atlanta, Georgia.			Contact the Head Technologist at 416-235-6044, prior to shipping specimen. CDC form must be completed, prior to shipping.
Calicivirus Infections Calicivirus		Faeces	Sterile container	Electron Microscopy	Virus Detection	3 days	Within 3 days	If transportation is delayed, refrigerate at 4°C.

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Candidiasis	B12	Vaginal or urethral smear	Slide mailer	Microscopy	STI	2 days	2 days	
Chancroid (<i>Haemophilus ducreyi</i>)	*	Bubo pus, swab of chancre; pure culture on chocolate agar slant	Genital culture	Culture	STI	7 days	Within 7 days	*Contact the STI Laboratory at 416-235-5733 or your local Public Health Laboratory prior to submitting specimen for collection kits and instructions. Specimens must be transported to the laboratory within 1 day of collection.
Chlamydial Infections <i>Chlamydia trachomatis</i>	V03	Male urethral swab Female endocervical swab	GEN-PROBE® APTIMA® Unisex Swab Specimen Collection Kit	Nucleic Acid Amplification Testing (NAAT) is available for <i>Chlamydia trachomatis</i> (CT), <i>Neisseria gonorrhoeae</i> (GC), or both (CT / GC).	STI	2 days	2 days	Specimen collection instructions are located on the collection kit packaging. Please refer to the instructions prior to specimen collection. After collection, the swab must be stored and transported to the lab at 2 – 30°C within 60 days of collection. Note: If there is more than one swab or any other swabs other than the blue swab provided, the specimen will be rejected. Inadequate specimen volume will also be rejected.

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		Male and female urine sample	GEN-PROBE® APTIMA® Urine Specimen Collection Kit		STI	2 days	2 days	Specimen collection instructions are located on the collection kit packaging. Please refer to the instructions prior to specimen collection. After collection, the urine must be stored and transported to the lab at 2 – 30°C within 30 days of collection. Note: If the specimen is not within the two lines the sample will be rejected. Neat urines will be rejected.
Chlamydial Infections <i>Chlamydia trachomatis</i> (continued)		Non-genital source – rectal, pharyngeal, conjunctival scraping / swab, 1-2 ml of fluid from auger suction, transtracheal / nasopharyngeal aspirate from neonates.	CHL (C) Male or female	Chlamydia culture	STI	5 days	Within 5 days	Collection kit instructions are provided with the kit order or are available on the website. The specimen should be transported at 2 - 8C or on wet ice to the laboratory for processing within 48 hours of collection. In situations of delayed transportation, specimens should be frozen at -70C and transported on dry ice.

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Chlamydial Infections <i>Chlamydia trachomatis</i> (continued)		Sexual Abuse in Peripubertal and Prepubertal Children and Sexual Assault Cases		Culture and NAAT	STI			<p>Cultures have been the preferred method for medico-legal purposes, however nucleic acid amplification tests (NAATs) may be acceptable if positive results are confirmed by a second set of primers. If available, both tests (culture and NAAT) should be taken. Molecular diagnostic tests, especially NAATs are more sensitive than culture. GEN-PROBE® APTIMA® Assay confirmatory testing is available for both <i>Chlamydia trachomatis</i> and <i>Neisseria gonorrhoeae</i>.</p> <p>All specimens to be transported to the laboratory under Legal Seal.</p> <p>Contact the Medical Microbiologist prior to legal specimen collection at 416-235-5806.</p>
<i>Chlamydophila pneumoniae</i> (TWAR agent)	B07	Nasopharyngeal swab; tracheal aspirate; Respiratory tract specimens	Sterile container or chlamydia / multi-organism transport media	PCR	Respiratory Bacteriology	5 days	Within 5 days	
<i>Chlamydia psittaci</i>		Blood, clotted or serum	BL-S	Microimmuno-fluorescence, IgG, IgM, IgA (specify)	STI Referred to NML			Relevant clinical information is required for testing

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Cholera <i>Vibrio cholerae</i>	B02	Faeces	Faeces collection kit (Cary-Blair or other appropriate transport medium)	Culture	Enteric	3 days	Identification of cultures: within 5 days	Consult Medical Microbiologist at 416-235-5841 or your local Public Health Laboratory. Refrigerate specimen at 4°C if transport delayed. Specimen must be received at the laboratory within 5 days of collection.
	* Ref. ID	Pure culture	Appropriate agar medium	Identification, biotyping, serotyping	Enteric	NA	Identification and serological testing: 5 days	Consult with Bacteriology Laboratory at 416-235-5707 before submitting isolate. *Use Reference ID Requisition (Green).
Clonorchiasis Opisthorchis <i>Clonorchis sinensis</i> (Chinese Liver Fluke)	P04	Faeces in SAF preservative	Para	Microscopy for Ova	Parasitology	3 days	Within 3 days	Collect faeces in clean, dry container and emulsify faeces in SAF preservative immediately after collection.
Coccidiosis <i>Cryptosporidium</i> <i>Cyclospora</i> <i>Isospora</i> <i>Sarcocystis</i>	P04	Faeces in SAF preservative	Para	Microscopy	Parasitology	3 days	Within 3 days	Consult Parasitology at 416-235-5722 prior to collection. Duodenal contents and autopsy/biopsy materials are accepted only if result of faeces examination is negative.

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Colitis, Haemorrhagic <i>Escherichia coli</i>	B02	Faeces	Faeces collection kit (Cary-Blair or other appropriate transport medium)	Culture	Enteric	3 days	Identification of cultures: within 5 days.	Refrigerate specimen at 4°C if transport delayed. Specimens must be received at the laboratory within 5 days of collection.
	* Ref. ID	Pure culture	Appropriate agar medium	Serotyping, Molecular typing (PFGE), Verotoxin determination	Enteric		Serological typing and verotoxin determination: 10 days	Molecular typing is restricted to outbreak situations. Contact Bacteriology at 416-235-5707 or your local Public Health Laboratory. *Use Reference ID Requisition (Green).
Coxsackie Virus Infections	V42	Faeces	Virus – Enteric	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	Culture on faeces performed from April 15 th to December 14 th . EM only performed from December 15 th to April 14 th . Refrigerate specimen if transport is delayed
		Autopsy/biopsy material	Virus Culture Kit (Tissue)	Electron Microscopy				
		Throat/nasal swab; vesicle fluid; rectal or other swab	Virus culture	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	

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		Cerebrospinal fluid (CSF); pleural or pericardial fluid	Sterile container	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
Creutzfeldt-Jakob Disease (CJD)				Testing not available at OPHL.	Contact Debra Goral, NML, Winnipeg MB 204-789-6078.			
Cryptosporidiosis <i>Cryptosporidium</i> spp.	P04	Faeces in SAF preservative	Para	Microscopy for oocysts	Parasitology	3 days	Within 3 days	
	P01	Water samples (see notes)			Environmental Microbiology			Consult Head, Environmental Microbiology at 416-235-5707 or your local Public Health Laboratory prior to collection of sample, where water is suspected as the source of contamination.
Cyclosporiasis <i>Cyclospora cayetanensis</i>	P04	Faeces in SAF preservative	Para	Microscopy for oocysts	Parasitology	3 days	Within 3 days	Same as above.
Cysticercosis <i>Taenia</i> spp.	S06	Blood, clotted or serum, CSF	BL-S	Western Blot	Immunodiagnosics Referred to the National Reference Centre for Parasitology, Montreal, Quebec.	4 – 6 weeks	4 – 6 weeks	

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Cytomegalovirus	V05	Bronchial washing; BAL, CSF	Original collection vial or tube	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	Refrigerated specimen during transit but do not freeze. Deliver to Laboratory within 1 day of collection.
		Urine	Virus - Enteric or sterile container	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
		Throat swab; biopsy / autopsy material	Virus - Culture Virus Culture Kit (Tissue)	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
		Blood (Buffy coat)	Sodium heparin tube	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
	V05	Blood, clotted or serum	BL-S	EIA (IgG, IgM)	Virology	5 days	Within 5 days	Specify whether test is for IgG (past infection) or IgM (acute infection). If congenital infection is suspected, submit maternal serum specimen as well as one from the infant
Cytomegalovirus antigenemia				Testing no longer available from the OPHL.	Contact Mt. Sinai Hospital at 416-586-4800 ext. 4182.			

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Demodectic mange	P03	Skin scraping including hair follicles and sebaceous glands	Sterile container with 70% ethanol	Microscopy	Parasitology	3 days	Within 3 days	Microscopy for mites.
Diarrhoea, Antibiotic Associated <i>Clostridium difficile</i> (Pseudomembraneous colitis)	B03	Faeces 5–10mL of diarrhoeal faeces	90 ml sterile container	Toxin detection	Enteric	1 day	1 day	Refer to Labstract Clostridium difficile Toxin Testing
Diarrhoea, Bacterial	B02	Faeces, especially portions containing blood and mucus	Faeces collection kit (Cary-Blair or other appropriate transport medium)	Culture, identification, serotyping, molecular typing (PFGE) Routine examination includes Salmonella, Shigella, Campylobacter, Yersinia and <i>E.coli</i> 0157:H7. Culture for Vibrio and other food poisoning agents available upon request.	Enteric	3 days	Identification of cultures: within 5 days	Refrigerate specimen at 4°C if transport is delayed. Specimen must be received at the laboratory within 5 days of collection.

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	* Ref. ID	Pure culture for identification	Appropriate agar medium	Identification, serotyping, molecular typing (PFGE)	Enteric		Identification of cultures: within 5 days	Consult local Public Health Laboratory, in outbreak situation. *Use Reference ID Requisition (Green). Refrigerate specimen if transport delayed.
Diarrhoea, Parasitic Including protozoa, helminths and coccidians	P04	Faeces in SAF preservative 1 part formed faeces to 3 parts SAF	Para	Microscopy	Parasitology	3 days	Within 3 days	Collect faeces in clean, dry container. Emulsify faeces in SAF preservative immediately. Submit 1 specimen per day X 3 days.
		1 part liquid faeces to 1 part SAF	Para			3 days	Within 3 days	
	P03	Scrapings from ulcerated bowel during sigmoidoscopy (primary amoebic dysentery)	Sterile container	Microscopy, culture	Parasitology	3 days	Within 3 days	
	S06	Blood, clotted or serum	BL-S	Serology	Immunodiagnosics	7 days	Within 7 days	Immunodiagnosis is only available for Amoebic dysentery.
	P02	Worm segments with saline to moisten.	Clean container. Submit in Para collection kit if more than five days in transit.	Microscopy	Parasitology	3 days	Within 3 days	

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Diarrhoea, Viral Including Adenovirus, Astrovirus, Calicivirus (Norwalk-like viruses and Sapporo-like viruses), Coronavirus, Enteroviruses, Rotavirus, Torovirus	V06	Faeces	Virus Enteric	Electron Microscopy	Virus Detection	3 days	Within 3 days	Consult local Public Health Laboratory for outbreak collection kit, in outbreak situations. Collect faeces as early in illness as possible. Faeces tested by <ul style="list-style-type: none"> • EM from Dec. 15th to Apr. 14th • Culture and/or EM from April 15th to Dec. 14th. Refrigerate specimen if transport is delayed.
	V36	Faeces	Virus Enteric	Direct antigen testing for Rotavirus (Regional Labs only)	Virus Detection	3 days	Within 3 days	
	V42	Faeces	Virus Enteric	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	
Dientamoebiasis <i>Dientamoeba fragilis</i>	P04	Faeces in SAF preservative	Para	Microscopy	Parasitology	3 days	Within 3 days	
Diphtheria <i>Corynebacterium diphtheriae</i>	B02	Swab of throat, nose, ear, skin lesion	Amies charcoal	Culture and toxin determination	Respiratory Bacteriology	NA	Identification of referred culture: 3 days Culture and Identification: 5 days	Specify Diphtheria culture on requisition – only performed on request. Maximum Storage/transit time at 2 ^o C to 8 ^o C is within 3 days of collection.
	B04	Serum	BL-S	Diphtheria Toxoid IgG Enzyme Immunoassay	Molecular Surveillance	2-3 weeks	2-3 weeks	Testing is available in the rare event of an adverse reaction to diphtheria vaccine or the possibility of humoral immunodeficiency in the patient. This must be indicated on the test requisition in order for testing to be performed.

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Diphtheria <i>Corynebacterium diphtheriae</i> (continued)	* Ref. ID	Pure culture	Appropriate agar medium	Identification, toxin determination	Reference Identification and Susceptibility	NA	Identification of referred culture: 3 days Culture and Identification: 5 days	Notify Bacteriology at 416-235-5706 or your local Public Health Laboratory, before submitting specimen. *Use Reference ID Requisition (Green).
Diphyllobothriasis <i>Diphyllobothrium</i> spp.	P04	Faeces in SAF preservative	Para	Microscopy for ova and proglottids	Parasitology	3 days	Within 3 days	
	P02	Proglottids (segments)	See notes			2 days	Within 2 days	If proglottids (segments) visible in faeces at time of collection, do not place them in SAF. Submit in sterile container in normal saline.
Dracunculiasis <i>Dracunculus medinensis</i> (Guinea Worm)	P02	Lesion; adult worm from lesion	Sterile container	Microscopy	Parasitology	2 days	Within 2 days	
Ear Infections; Fungal	M04	Material collected from ear canal; dry swab or swab in charcoal transport media	FS or sterile container	Culture and microscopy	Mycology	13 – 15 days	Organism dependant	

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Echinococcosis Echinococcus granulosus	P03	Aspirated fluid from cyst, excised cyst.	Para	Microscopy	Parasitology	3 days	Within 3 days	
	S06	Blood, clotted or serum	BL-S	CF, EIA, IHA	Immunodiagnosics EIA referred to the National Center for Parasitology, Montreal, Quebec. (By special request only)	7 days 4 – 6 weeks	Within 7 days 4 -6 weeks	
Ehrlichiosis <i>Ehrlichia chaffeensis</i> , <i>Ehrlichia</i> spp.				Test is not available through the OPHL.	Immunodiagnosics			
Encephalitis, Viral Including mumps virus, measles virus, herpes simplex virus, varicella virus, enterovirus, arbovirus, rubella virus, influenza virus and vaccinia virus Also see Arbovirus Infections	V42	Cerebrospinal fluid (CSF)	Sterile tube	Virus isolation	Virus Detection Requests for PCR are forwarded to Hospital for Sick Children.	Preliminary 7 days	Within 21 days	
		Throat swab; vesicle fluid; rectal swab	Virus Culture Kit (Tissue)	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	
		Autopsy/biopsy material	Virus Culture Kit (Tissue)	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	Specify likely agents for investigation
	V02	Blood, clotted or serum	BL-S	Virus serology (specify IgM or IgG)	Virology	5 days	Within 5 days	Acute and convalescent serum required.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Enterobiasis <i>Enterobius vermicularis</i> , (Pinworm)	P02	Cellophane tape/plastic paddle applied to perianal region	Pinworm kit	Microscopy for ova	Parasitology	2 days	Within 2 days	Collect sample first thing in the morning before washing or using toilet. Apply tape applicator to the anus, using a rocking motion to cover as much of the perianal mucosa as possible.
	P02	Adult worms	Para	Microscopy	Parasitology	2 days	Within 2 days	
Enterovirus Infections Polio Virus, coxsackievirus, echovirus Also see Coxsackievirus Infections Also see Poliomyelitis	V07	Throat swab	Virus culture	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	Refrigerate specimens following collection and during transport.
		Faeces	Virus - Enteric	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	Culture on faeces performed from April 15 th to December 14 th . EM only performed from December 15 th to April 14 th .
		Cerebrospinal fluid (CSF)	Sterile container	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
Epstein Barr Virus (EBV)	V08	Blood, clotted or serum	BL-S	EIA, IFA	Virology	7 days	Within 7 days	
Erythrasma (pseudomycosis) <i>Corynebacterium minutissimum</i>	M03	Skin scrapings from intertriginous areas	Fungus culture	Microscopy	Mycology	1 Day	1 Day	

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Fascioliasis Fasciola hepatica, F. gigantica	P04	Faeces in SAF preservative	Para	Microscopy for ova Microscopy for eggs of Fasciola gigantica or Fasciola hepatica.	Parasitology	3 days	Within 3 days	
				Serology is not available				
Fasciolopsiasis <i>Fasciolopsis buski</i>	P04	Faeces in SAF preservative	Para	Microscopy for ova	Parasitology	3 days	Within 3 days	There is no Immunodiagnostic test available for this parasitic disease.
Filariasis (Various filarid infections)	P03	Unstained blood slides, thick and thin; EDTA blood	Slide mailer	Microscopy for microfilariae	Parasitology	2 days	Within 2 days	EDTA blood required for Knott's concentration procedure
	S06	Blood, clotted or serum	BL-S	EIA	Immunodiagnosics Referred to National Reference Center for Parasitology, Montreal, Quebec.			

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Food-Borne Bacterial Disease (Infection/toxin acquired from food or water) Faeces samples are examined for: Salmonella spp., Shigella spp., Campylobacter spp., E.coli 0157:H7, Pathogenic Yersinia spp., Clostridium perfringens enterotoxin and , Vibrio spp on request. Food samples are examined for indicators of poor sanitation (HPC, Coliforms, <i>E.coli</i> and total gram negatives) and enteric pathogens listed above including <i>Staphylococcus aureus</i> and <i>Bacillus cereus</i> .	B02	Faeces	Faeces collection kit (Cary-Blair or other appropriate transport medium)	Culture	Enteric	3 days	Identification of cultures: within 5 days	Refrigerate specimen at 4°C if transport delayed. Specimen must be received at the laboratory within 5 days of collection.
		Faeces	TB / CD (90 mL sterile container)	Clostridium perfringens enterotoxin determination	Enteric	Within 7 days	Within 7 days	Freeze specimen for <i>C. perfringens</i> toxin testing at -20°C or lower if it is not delivered within 1 day of collection.
		Remains of meal 100-200g of food	Original container, if possible, Whirl-Pak bag	<i>Staphylococcus aureus</i> enterotoxin where appropriate.	Environmental	Culture 4 days	Culture within 7 days	Transport food under refrigeration within 2 days. In cases of suspected Food-borne Illness, contact the local Health Unit. Also see Botulism.
Fungal Culture for Identification	M07	Pure culture	Appropriate agar medium	Identification	Mycology	NA	Identification: dependent on organism(s).	Consult Mycology Laboratory at 416-235-5720, when sending, <i>Blastomyces dermatitidis</i> , <i>Coccidioides immitis</i> and <i>Histoplasma capsulatum</i> , prior to shipping.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Fungal Culture, Superficial	M03	Skin scrapings, nail scrapings/clippings, hair (root ends)	(Black paper)	Microscopy and culture Microscopy and culture for dermatophytes, yeast and non-dermatophytic mould pathogens of keratinized tissue.	Mycology	Within 3 weeks	Identification: dependent on organism(s).	
Fungal Culture, Susceptibility Testing	M01	Pure culture	Appropriate agar medium	MIC	Mycology		Within 14 days	Not a routine test for all pathogens.
Fungal Culture, Systemic or Subcutaneous	M04	Body fluids or secretions, pus from lesions, abscess aspiration, skin ulcers; biopsy/autopsy materials, cerebrospinal fluid, surgically collected sinus wall scraping, respiratory specimens, blood-culture.	FS or sterile container	Microscopy and culture	Mycology	Within 4 weeks	Identification: dependent on organism(s).	<ol style="list-style-type: none"> 1. For skin ulcers, biopsies are preferable to swabs since the presence of fungal elements within tissues is a diagnosis of invasive disease. Take biopsy near periphery of lesion and include enough tissue for culture. 2. Collect 3 early morning sputum on 3 consecutive days from deep cough. 3. Citrated or heparinized blood can also be processed, however it is not considered an ideal specimen for dimorphic fungi.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Fungal Serology	S05	Blood, clotted or serum	BL-S	Immuno-diffusion and complement fixation Serology for Histoplasmosis, Coccidioidomycosis, Blastomycosis, and Aspergillosis only.	Immunodiagnosics	7 days	Within 7 days	
	S05	Cerebrospinal fluid (CSF)	Sterile container	Direct antigen testing for Cryptococcosis only.	Immunodiagnosics	7 days	Within 7 days	Both blood and spinal fluid are tested for cryptococcal antigen – not antibody.
Gnathostomiasis				Testing not available at OPHL.	Referred to National Reference Centre for Parasitology Research (NRCP), Montreal, PQ 514-934-8347. NRCP forwards to Mahidol University, Thailand.			

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Hantavirus Pulmonary Syndrome	V10	Blood, clotted or serum	BL-S	Serology EIA	Virology Referred to NML, Winnipeg, MB. Consult Medical Microbiologist at 416-235-5726 or your local Public Health Laboratory before ordering test. Include patient history.			
Helicobacter pylori Gastritis Peptic ulcer	S02	Blood, clotted or serum	BL-S	EIA	Serology Contact Orillia Public Health Laboratory at 705-325-7449.	7 days	Within 7 days	
Hepatitis A (HAV) (Infectious Hepatitis)	V11 V12	Blood, clotted or serum	BL-S	Anti-HAV Total (IgG & IgM) Anti-HAV IgG (Central OPHL only) Anti-HAV IgM	Virology	6 days	Within 6 days	Specify test requested: • Immunity (Total IgG and IgM or Specific IgG) OR • Acute Infection (Specific IgM)

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Hepatitis B	V13	Blood, clotted or serum	BL-S	HBsAg	Virology	6 days	Within 6 days	Specify whether submission is for diagnosis or immunity Immunity – Anti-HBs Diagnosis – HbsAg - Anti-HBc IgM, HbeAg & Anti-Hbe – tested only if HbsAg is Reactive.
	V14	Blood, clotted or serum	BL-S	Anti-HBs	Virology	6 days	Within 6 days	
	V15	Blood, clotted or serum	BL-S	HBeAg	Virology	6 days	Within 6 days	
	V16	Blood, clotted or serum	BL-S	Anti-HBe	Virology	6 days	Within 6 days	
	V17	Blood, clotted or serum	BL-S	HBcIgM	Virology	6 days	Within 6 days	
	V18	Blood, clotted or serum	BL-S	Anti-HBc	Virology	6 days	Within 6 days	
		Autopsy			Refer all samples to <ul style="list-style-type: none"> TML - Mt Sinai Hospital, Toronto at 416-586-4432 			
Hepatitis B - DNA	V13	Frozen serum (minimum of 2.5 mL Required) Or Whole blood (red or tiger top) to be received at your local Public Health Laboratory within 4 hours of collection of the blood.	BL-S	HBV-PCR	Virology	10 days	Within 10 days	Details are provided in the Hepatitis B-DNA Specimen Collection Guidelines. Include the Hepatitis Information form with the requisition.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Hepatitis C Genotyping	V19	Whole blood, (red or tiger top) Frozen serum (Minimum of 2.5 mL required)	BL-S	HCV-PCR	Virology	10 days	Within 10 days	To determine genotype, pre-treatment. More information is available in the Specimen Collection Details Section of this Guide. Include the Hepatitis Information form with the requisition.
Hepatitis C RNA Quantitative	V19	Frozen serum (minimum of 2.5 mL Required) or Whole blood (red or tiger top) to be received at your local Public Health Laboratory within 4 hours of collection of the blood.	BL-S	HCV-PCR	Virology	10 days	Within 10 days	Use test to: <ul style="list-style-type: none"> • establish HCV viral load prior to treatment • monitor treatment • determine HCV infection in antibody negative patients who are immuno compromised or recently exposed (6-10 weeks) to HCV • resolve antibody indeterminate results for symptomatic patients Include the Hepatitis Information form with the requisition. More information is available in the Specimen Collection Details Section of this Guide.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Hepatitis C Virus	V19	Blood, clotted or serum. Heparinized blood not appropriate	BL-S	Anti-HCV	Virology	6 days	Within 12 days	The detection of antibodies to HCV cannot be used to differentiate between a previous infection (chronic) and an acute infection. Details are provided in the Hepatitis C-rNA Specimen Collection Guidelines.
		Autopsy			Refer all samples to <ul style="list-style-type: none"> TML - Mt Sinai Hospital, Toronto at 416-586-4432 			
Hepatitis D Virus Delta Hepatitis	V20	Blood, clotted or serum	BL-S	EIA	Virology Referred to NML, Winnipeg, MB.	14 days	Within 14 days	This test is processed only when HBsAg is positive (HDV is a deficient virus and multiplies only in the presence of HBV).
Hepatitis E Virus	V45	Blood, clotted or serum	BL-S	EIA	Virology Referred to NML, Winnipeg, MB.	14 days	Within 14 days	Submit relevant clinical details including travel history.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Herpes Simplex Virus Infections (HSV) Herpes simplex virus Types 1 and 2	V21	Vesicular fluid; scrapings from base of skin lesions; biopsy material.	Virus culture	Virus isolation and typing	Virus Detection	Preliminary 7 days	Within 10 days	
	V21	Vesicular fluid; scrapings from base of skin lesions slide, unfixed		Electron Microscopy	Virus Detection	2 days	2 days	Contact EM Laboratory at 416-235-6121, prior to submission of urgent cases (e.g. Encephalitis, near-term pregnant females or neonatal herpes).
	V21	Blood, clotted or serum	Virus serology	EIA, HSV IgG (group specific)	Virology	Within 5 days	Within 5 days	HSV IGM serology and HSV Type 1 and 2 IGG serology is not available at the OPHL.
	V21	Cerebrospinal fluid (CSF)	Sterile container	Virus isolation	Virus Detection Requests for PCR are forwarded to HSC.	Preliminary 7 days	Within 21 days	
Heterophyiasis <i>Heterophyes heterophyes</i> , <i>Metagonimus yokogawai</i> (<i>opisthorchids</i>)	P04	Faeces in SAF preservative	Para	Microscopy for eggs	Parasitology	3 days	Within 3 days	Collect faeces in clean, dry container and emulsify faeces in SAF preservative immediately after collection.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Hookworm Disease <i>Ancylostoma duodenale</i> , <i>Necator americanus</i> , <i>Trichostrongylus</i> spp.	P04	Faeces in SAF preservative	Para	Microscopy for eggs and larvae	Parasitology	3 days	Within 3 days	Collect faeces in clean, dry container and emulsify faeces in SAF preservative immediately after collection.
		Skin scrapings from larval tracks	Para	Microscopy for larvae	Parasitology	3 days	Within 3 days	Consult Parasitology at 416-235-5722 or your local Public Health Laboratory before collecting specimen.
Human Herpes Virus Type 6 (HHV 6) Exanthem subitum, Roseola infantum	V22	Plasma	EDTA or Lavender top tube	PCR	Virology Referred to NML, Winnipeg, MB.			Include clinical history. Patient criteria: 1. Primary infection or reactivation in immunocompromised individuals. 2. Encephalitis cases (send CSF).
		CSF	Sterile tube					
Human Immunodeficiency Virus (HIV 1 and 2) Serology		Blood, clotted or serum	Virus H	HIV-1/2 EIA, HIV-1 p24 Antigen, HIV-1 Western blot	HIV	6 days	Within 6 days	
		Autopsy			Refer all samples to • TML - Mt Sinai Hospital, Toronto at 416-586-4432			

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
HIV PCR (HIV 1 PCR)		Human plasma collected in the anti-coagulant EDTA, human whole blood collected in EDTA anti-coagulant only	See notes	Qualitative genome detection	HIV	10 days	Within 10 days	EDTA anticoagulated whole blood may be stored for up to 12 hrs at room temperature or for an additional 72 hours at 2-8 ^o C prior to testing or separation of plasma. Do not freeze. Plasma must be separated from whole blood within 12 hours after collection if stored at room temperature and within 72 hours if stored at 2-8 ^o C.
(HIV 2 PCR)					Referred to National Laboratory HIV Reference Services (NLHRS) Ottawa, ON.			Do not freeze, refrigerate or separate specimen Details are provided in the HIV PCR Specimen Collection Guidelines.
HIV – Viral Load		Blood, 2 tubes in EDTA or PPT	See notes	Quantitative HIV detection	HIV Test performed at Toronto OPHL at 416-235-6023 •Hospital for Sick Children, Toronto at 416-813-6267 •Mt Sinai Hospital, Toronto at 416-586-4800 x4184 •Children’s Hospital of Eastern Ontario at 613-737-7600 x3989	6 days	Within 6 days	Contact the appropriate HIV Viral Load laboratory to obtain tubes. See the section area to left for details. Details are provided in the HIV Viral Load Specimen Collection Guidelines.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
HIV Drug Resistance Testing (Genotyping)		HIV – I Viral load sample previously submitted for testing	None	Genotyping	HIV Referred to BCCE.	N/A	10 days	Consult with Central Public Health Laboratory at 416-235-6022 to obtain Genotyping request form.
Human Papilloma Virus (HPV), Condyloma acuminata		Biopsy	Virus Culture Kit (Tissue)	Electron Microscopy	Virus Detection	3 days	Within 3 days	
Human T Cell Lymphotropic Virus HTLV I HTLV II		Blood, clotted or serum	BL-S None	HTLV I/II Screen EIA, HTLV I/II Confirmatory Line Immunoassay	HIV	6 days 2 weeks	Within 6 days Within 2 weeks	
Hymenolepiasis <i>Hymenolepis nana</i> <i>H. diminuta</i>	P04	Faeces in SAF preservative	Para	Microscopy for eggs	Parasitology	3 days	Within 3 days	Collect faeces in dry, clean container. Emulsify in SAF preservative immediately after collection.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Influenza Influenza Viruses Types A, B	V23	Nasopharyngeal swab, throat swab	Virus - Respiratory	Virus isolation,	Virus Detection	Preliminary 7 days	Within 10 days	Direct antigen detection is available in outbreak situations or by prior arrangement with the Virus Detection Laboratory at 416-235-5730 or your local Public Health Laboratory.
				Direct antigen detection		1 day	1 day	
Influenza Influenza Viruses Types A, B (Continued)		Auger suction in original collection vial and tubing (not recommended for antigen detection)	Place vial in clear biohazard bag	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	
		Autopsy or lung biopsy material	Virus Culture Kit (Tissue)	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
	V23	See Notes						Effective January 1 st 2011 Influenza A and B serology by Complement Fixation is no longer available at the Public Health Laboratories.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
H1N1 ¹ Pandemic Influenza, pH1N1	Indicate H1N1	Nasopharyngeal aspirate/swab	Virus – Respiratory	PCR	Molecular Diagnostics	2-3 days ^{3,4}	2-4 days ⁴	<ol style="list-style-type: none"> 1. Provide clinical information including pre-existing chronic conditions, risk group, and hospitalization status on the General PHL Test requisition. 2. Post mortem samples: Contact helpline 1-800-640-7221 to make arrangements for testing. 3. Virus Culture will be performed on a select number of PCR negative samples. 4. Molecular Testing sites: <ul style="list-style-type: none"> • Toronto PHL • Hamilton PHL • Kingston PHL • Ottawa PHL • Timmins PHL <p><i>Turnaround time will vary according to geographical location and proximity to the molecular testing sites.</i></p>
		BAL	Sterile container					
		Post mortem, autopsy specimens ²	Sterile container					

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Lassa Fever Lassa Fever Virus		See Notes						Consult Medical Microbiologist at 416-235-5726 or your local Public Health Laboratory before collecting any specimens.
Legionnaire's Disease <i>Legionella</i> spp.	B05	Urine	TB / CD, sterile container	ICT	Respiratory Bacteriology	1 day	1 day	Maximum storage / transit time at: <ul style="list-style-type: none"> • 2⁰C to 8⁰C is within 30 days of collection. • -20⁰C is within 1 year of collection.
	B05	Respiratory tract washing; pleural fluid, lung tissue	TB / CD	Culture, DFA	Respiratory Bacteriology	Culture: 14 days DFA: 1 day	Culture: within 14 days DFA: 1 day	Transport specimens for culture under refrigeration without delay. Samples in formalin are acceptable for DFA only. Sputum specimens are not optimal. Maximum storage / transit time at 2 ⁰ C to 8 ⁰ C is within 3 days of collection.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Legionnaire's Disease <i>Legionella</i> spp. (continued)	B05	Blood, clotted or serum	BL-S	IFA	Respiratory Bacteriology	2 days	2 days	Acute and convalescent serum required. Maximum storage / transit time at: <ul style="list-style-type: none"> • 2^oC to 8^oC is within 30 days of collection. • -20^oC is within 1 year of collection.
		Environmental sources-water Environmental swabs	Water bottles Environmental Swabs	Culture	Environmental Microbiology	Culture: 14 days	Culture: within 14 days	Consult Environmental Microbiology at 416-235-5716 prior to submission of specimens.
	* Ref. ID	Pure culture	Appropriate agar medium	Identification, Molecular typing Molecular typing done only in outbreak situations.	Respiratory Bacteriology	2 days	2 days	Consult with the Medical Microbiologist at 416-235-5841 regarding Molecular typing. *Use Reference ID Requisition (Green).

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Leishmaniasis, Cutaneous Form	P03	Biopsy or aspirate from edge or base of skin lesion – slide from the same site	Sterile container & Slide mailer	Microscopy, culture	Parasitology	30 days	Within 30 days	Material from the surface or from the necrotic areas of the ulcer is unsuitable for detection of the parasite. Please supply form Specimen Collection Guide for Cutaneous Leishmaniasis form (F-C-PA-038) for all <i>Leishmania</i> specimens.
	S06	Blood, clotted or serum	BL-S	IFA	Immunodiagnosics Referred to the National Reference Centre for Parasitology, Montreal, Quebec.	4 – 6 weeks	4 – 6 weeks	
Leishmaniasis, Visceral Form (Kala-azar)	P03	Thick and thin blood slides; bone marrow slides; biopsy materials (spleen, liver, lymph nodes); blood with anti-coagulant	Sterile container & slide mailer	Microscopy, culture	Parasitology	30 days	Within 30 days	Consult local Public Health Laboratory at 416-235-6315.
	S06	Blood, clotted or serum	BL-S	IFA	Immunodiagnosics Referred to the National Reference Centre for Parasitology, Montreal, Quebec.	7 days	Within 7 days	

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Leprosy <i>Mycobacterium leprae</i>		See notes		PCR	TB	7 days	Within 7 days	Consult Medical Microbiologist at 416-235-5841 or your local Public Health Laboratory.
Leptospirosis (Weil's Disease) <i>Leptospira</i> spp.	S04	Blood, clotted or serum	BL-S	Micro-haemagglutination	Immunodiagnostics Referred to NML, Winnipeg, MB.			
Listeriosis <i>Listeris monocytogenes</i>		Contact surfaces	Environmental swab	Culture	Environmental Microbiology	4 days	12 days	Samples will only be tested for the investigation of confirmed clinical cases.
		Environmental sources		Testing not available at the OPHL.	Contact the Bureau of Microbial Hazards in Ottawa, ON at 613-957-0910.			
		Food	Whirl-pak bag	Culture	Environmental Microbiology	4 days	12 days	Samples will only be tested for the investigations of confirmed clinical cases. For closed/intact samples please consider contacting the Canadian Food Inspection Agency (CFIA) for testing.
	* Ref. ID	Pure culture	Blood agar	Culture confirmation and serotyping	Reference Identification and Susceptibility	NA	Serotyping: 5-21 days Culture confirmation: 2-4 days	*Use Reference ID Requisition (Green).

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Lyme Disease (<i>Borrelia burgdorferi</i>) ECM (Erythema Chronicum Migrans)	S03	Blood, clotted or serum	BL-S	EIA, WB	Immunodiagnosics	7 days	Within 14 days	Submit detailed clinical history, including recent travel history and date of onset.
Lymphocytic choriomeningitis (LCM)	V02	Blood, clotted or serum	BL-S		Virology Serology referred to NML, Winnipeg, MB.			CDC form has to be completed and signed by requesting physician, before specimen is submitted to NML.
Lymphogranuloma venereum (LGV)	V03	Aspirate of bubo, swab of purulent exudate, rectal swab	Chlamydia / Multi-organism transport media	Culture / PCR	STI			Upon physician request positive <i>Chlamydia trachomatis</i> cultures are referred to NML for LGV serotyping.
		Blood, clotted or serum	BL-S	MIFA	STI Referred to NML, Winnipeg, MB.			

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Malaria <i>Plasmodium falciparum</i> , <i>P. malariae</i> , <i>P. ovale</i> , <i>P. vivax</i>	P03	Unstained blood films, thick and thin from finger prick blood at height of paroxysm and 8-16 hours later and minimum of 2mL of EDTA blood	Slide mailer	Microscopy / PCR	Parasitology	1 day	Within 1 day	<p>Blood films made from EDTA are acceptable only if prepared within 1 hour of collection.</p> <p>Dry the blood films without heat.</p> <p>PCR will be performed on blood specimens in the following circumstances: The specimen tests negative for malarial organisms by microscopy but clinical history and symptoms strongly suggest malaria infection. Or following consultation with the Medical Microbiologist / Head Technologist in the Parasitology Laboratory.</p>
	S06	Blood, clotted or serum	BL-S	IFA Serology available <u>only</u> for <i>P. falciparum</i> .	Immunodiagnosics Referred to the National Reference Centre for Parasitology in Montreal, Quebec.			

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Measles Measles Virus – Rubeola and Subacute Sclerosing Panencephalitis (SSPE)	V24	Nasopharyngeal swab, conjunctival swab, throat swab	Virus culture (ship on ice pack)	Virus isolation	Virus Detection PCR referred to NML, Winnipeg, MB.	Preliminary 7 days 1 week	Within 21 days Within 1 week	Contact the Head Technologist at 416-235-5730 or your local OPHL prior to collecting specimens.
		Cerebrospinal fluid (CSF)	Virus culture (ship on ice pack)	Virus isolation	Virus Detection PCR referred to NML, Winnipeg, MB.	Preliminary 7 days 1 week	Within 21 days Within 1 week	
		Urine	Sterile container	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
		Autopsy material (lung, brain)	Virus Culture Kit (Tissue) (ship on ice pack)		PCR referred to NML, Winnipeg, MB.	1 week	Within 1 week	
	V24	Blood, clotted or serum	BL-S	Virus serology – EIA IgG, IgM	Virology SSPE referred to NML, Winnipeg, MB.	5 days	Within 5 days	Collect serum for IgM testing 4–28 days after onset of symptoms. Specify whether test is for Immunity IgG or Diagnosis IgM. A follow-up serum collected after 7–10 days may be required for diagnosis. For SSPE, submit CSF and serum together.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Melioidosis (Whitmore Disease) <i>Burkholderia pseudomallei</i>		See notes						Contact Medical Microbiologist at 416-235-5841 or your local Public Health Laboratory prior to collection of specimen.
Meningitis, Bacterial <i>Haemophilus influenzae, Neisseria meningitidis, Streptococcus pneumoniae</i> and other organisms	* Ref. ID	Pure culture	Appropriate agar medium	Identification, susceptibility testing and serotyping	Reference Identification and Susceptibility	NA	Culture confirmed: 2 days , with serotyping / serogrouping <i>Streptococcus pneumoniae</i> Serotyping: 7-15 days	*Use Reference ID Requisition (Green).
	*	CSF or EDTA Blood	Sterile tube EDTA tube	PCR for <i>N.meningitidis</i> and <i>H.influenzae</i> . PCR is not available for <i>S.pneumoniae</i> .	Reference Identification and Susceptibility	5-7 days	5-7 days	Call your local Public Health Laboratory prior to collection.
Meningitis, Viral (Aseptic Meningitis) Coxsackie A & B Viruses, Echovirus, Mumps Virus, other	V42, V07	Cerebrospinal fluid (CSF)	Sterile tube	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
		Throat swab, vesicle swab	Virus culture	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Viruses See also Enterovirus Infections and Arbovirus Infections		Faeces	Virus - Enteric; sterile container	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
		Autopsy material, brain, spinal cord, intestinal content	Virus Culture Kit (Tissue)	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
	V02	Blood, clotted or serum	BL-S	Virus serology – EIA, IgG & IgM as applicable. Serology available for selected viral agents.	Virology	7 days	Within 7 days	Consult Medical Microbiologist at 416-235-5726 or your local Public Health Laboratory.
Metorchiasis <i>Metorchis conjunctus</i>	P04	Faeces in SAF preservative	Para	Microscopy for eggs	Parasitology	3 days	Within 3 days	Emulsify faeces in SAF immediately after collection.
Microsporidia <i>Microsporidia</i> spp. Encephalitozoon, Enterocytozoon, Nosema, Pleistophora	P04	Faeces in SAF preservative	Para	Microscopy for oocysts	Parasitology	3 days	Within 3 days	Consult Parasitology at 416-235-6315 prior to collection. Emulsify faeces in SAF immediately after collection. Large and Small bowel contents and biopsies are accepted only if the result of a faeces examination is negative.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
	P03	Large bowel and small bowel aspirate (in SAF) and biopsies (in Saline)		Microscopy for spores		3 days	Within 3 days	
Molluscum contagiosum	V25	Exudate from skin lesions; scraping from skin lesions; skin crust	Virus culture	Electron Microscopy	Virus Detection	3 days	Within 3 days	
MRSA Methicillin Resistant <i>Staphylococcus aureus</i>	B01 Ref. ID	Pure culture *	Appropriate agar medium	Confirmation, susceptibility testing, molecular typing (PFGE) and PCR for the detection of mecA and PVL	Reference Identification and Susceptibility	NA	Confirmation and Susceptibility: 1 - 4 days	*Use reference ID requisition (green)
MRSA Outbreak Specimens	B02	Nares; perineal/rectal; Skin lesions	Amies/stuarts	Culture and susceptibility testing	Respiratory	NA	Identification and Susceptibility: 1 - 4 days	Maximum storage / transit time at 2 ⁰ C to 8 ⁰ C is within 3 days of collection. Notify Head Technologist of Reference Identification and Susceptibility at 416-235-5706 before submitting
Mumps Mumps Virus	V42	Throat swab; saliva	Virus culture	Virus isolation	Virus Detection PCR referred to NML, Winnipeg, MB.	Preliminary 7 days	Within 21 days	

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
		Urine 2-10 mL (if orchitis present)	Sterile container	Virus isolation	Virus Detection PCR referred to NML, Winnipeg, MB.	Preliminary 7 days	Within 21 days	
		Cerebrospinal fluid (CSF)	Sterile tube	Virus isolation	Virus Detection PCR referred to NML, Winnipeg, MB.	Preliminary 7 days	Within 21 days	
	V27	Blood, clotted or serum	BL-S	Virus serology-EIA, IgG, IgM	Virology	5 days	Within 5 days	Specify whether test is for Immune status (IgG) or Diagnosis of Infection (IgM).
Mycobacteria <i>M. tuberculosis</i> Complex (includes MTB) Non-tuberculous Mycobacteria (NTM)	T04	Respiratory – (sputum, bronchial washing - BAL) A complete list of specimens and protocols including blood, bone marrow, urine, gastric lavage, tissue, faeces and CSF is available in the Mycobacteriology Specimen Collection Guidelines.	TB / CD, gastric wash, sterile container	Microscopy for Acid Fast Bacilli (AFB). Culture	Mycobacteriology	Microscopy: 1 day Culture: 7 weeks	Microscopy: 1 day Culture: within 8 weeks	Sputum: Instruct patient on how to produce sputum as opposed to saliva. Collect sputum specimens on 3 consecutive early mornings and submit each to laboratory upon collection. (5mL sputum is optimal) The patient may expectorate several times. Do not pool the three specimens. Do not have patient rinse mouth with tap water before producing specimen. BAL: submit 5 mL in a sterile container.
				AMTD (Amplified Mycobacterium Tuberculosis Direct Test): specimens		4 days	Within 4 days	AMTD may be performed, by special request, on AFB negative specimens when TB is clinically suspected.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
				positive for AFB by slide are tested by the AMTD which detects <i>M. tuberculosis</i> complex directly in clinical specimens; this test is restricted to specimens from new, untreated cases				Contact the Head, Mycobacteriology at 416-235-5993 or your local Public Health Laboratory prior to submission. Specimens must be tested by AMTD within 3 days of processing.
		Formalin fixed tissue or paraffin block		TB PCR	Mycobacteriology / Molecular	1 week	1 week	Must be submitted with copy of pathology report and H&E slide. Block plus slide will be returned to submitter Request TB PCR on form
		Previously isolated TB culture		Genotyping	Mycobacteriology / Molecular		1 – 3 weeks	Use genotyping request form available electronically at www.oahpp.ca Fill out form and fax to TB lab at 416 235 6013
Mycobacteria <i>M. tuberculosis</i> complex (includes MTB) Non-tuberculous	T01	Referred culture		Identification. Susceptibility testing (See Notes)		N/A N/A	Within 1 week Within 1 week	Suceptibility testing A) <i>M. TB</i> complex – Antituberculous drugs are tested routinely on all new cases. B) Non-tuberculous mycobacterial (NTM)

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Mycobacteria (NTM) (Continued)	T02	Referred culture		Species identification by DNA probe/HPLC		N/A	Within 1 week	Infections. Susceptibility testing is done by request, after consultation with Head, Mycobacteriology at 416-235-5993 or your local Public Health Laboratory.
	T03	Serum (not suitable for culture)	* See notes	Anti-mycobacterial drug levels	Referred to National Jewish Medical and Research Center, Denver, Colorado.			* Contact the Head, TB Laboratory at 416-235-5993 prior to submitting specimen.
Mycoplasma Infections Respiratory <i>Mycoplasma pneumoniae</i> , (atypical pneumonia)	B07	Nasopharyngeal swab; tracheal aspirate; Respiratory tract specimens	MP	PCR	Respiratory Bacteriology	5 days	5 days	Mycoplasma transport media (available from OPHL) may be stored at room temperature. Maximum storage / transit time if submitted in: <ul style="list-style-type: none"> • multitrans is within 5 days of collection. • sterile container is within 2 days of collection.
		Bronchial wash (Not to be used on neonates or infants)						
		Nasopharyngeal swab; tracheal aspirate	MP	PCR	STI	7 days	Within 7 days	PCR is available for special outbreaks, contact the Medical Microbiologist at 416-235-5841.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
	B06	Blood, clotted or serum		Test no longer available at the OPHL.	Immunodiagnosics			
Mycoplasma Infections, Other (<i>Mycoplasma</i> and <i>Ureaplasma urealyticum</i>)	B09	urethral, cervical swab, body fluids (less than 1 ml) , neonatal specimens, nasopharyngeal aspirates, auger suction, autopsy, biopsy, products of conception	Multi-organism Transport Media	Culture	STI	14 days	Within 14 days	Storage / transit time at: <ul style="list-style-type: none"> • 2-8°C and transport within 48 hours or <ul style="list-style-type: none"> • -70°C and ship on ice pack. Note: Mycoplasma testing for In-Vitro Fertility Programs or infertility screen will not be done. Semen specimens will not be tested.
		Body fluids (greater than 1 ml)	Sterile Collection Container					
		Urine						
		Blood	Blood Culture broth					
Myiasis Larvae of Various Flies ex. <i>Cuterebra</i>	P02	Larvae (maggot)	Screw-cap container	Microscopy	Parasitology	2 days	Within 2 days*	* May be necessary to rear maggot to adult fly stage for easier identification.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
<i>Neisseria gonorrhoeae</i>	B11	Male urethral swab Female endocervical swab	GEN-PROBE® APTIMA® Unisex Swab Specimen Collection Kit	Nucleic Acid Amplification Testing (NAA) is available for <i>Chlamydia trachomatis</i> (CT), <i>Neisseria gonorrhoeae</i> (GC), or both (CT / GC).	STI	2 days	2 days	Specimen collection instructions are located on the collection kit packaging. Please refer to the instructions prior to specimen collection. After collection, the swab must be stored and transported to the lab at 2 – 30°C within 60 days of collection. Note: If there is more than one swab or any other swabs other than the blue swab provided, the specimen will be rejected. Inadequate specimen volume will also be rejected.
		Male and female urine sample	GEN-PROBE® APTIMA® Urine Specimen Collection Kit		STI	2 days	2 days	Specimen collection instructions are located on the collection kit packaging. Please refer to the instructions prior to specimen collection. After collection, the urine must be stored and transported to the lab at 2 – 30°C within 30 days of collection. Note: If the specimen is not within the two lines the sample will be rejected. Neat urines will be rejected.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
		<p>Non-genital source – rectal, pharyngeal and conjunctival swabs and joint aspirate.</p> <p>All suspected sexual assault specimens.</p>	<p>GC</p> <p>Fluids should be collected in sterile containers.</p>	<p>Culture</p> <p>Confirmation and susceptibility testing will be done on all GC positive specimens.</p>	STI	2 days	Within 4 days	<p>Collection kit instructions are provided with the kits or are available on the website.</p> <p>Specimens can be stored at room temperature or incubated at 35-37C and transported to the laboratory as soon as possible.</p> <p>Confirmation and susceptibility testing will be done on all GC positive specimens.</p>
<i>Neisseria gonorrhoeae</i>		Sexual Abuse in Peripubertal and Prepubertal Children ¹ and Sexual Assault Cases		Culture and NAAT	STI			<p>Cultures have been the preferred method for medico-legal purposes, however nucleic acid amplification tests (NAATs) may be acceptable if positive results are confirmed by a second set of primers. If available, both tests (culture and NAAT) should be taken. Molecular diagnostic tests, especially NAATs are more sensitive than culture. GEN-PROBE[®] APTIMA[®] Assay confirmatory testing is available for both <i>Chlamydia trachomatis</i> and <i>Neisseria gonorrhoeae</i>.</p> <p>All specimens to be transported to the laboratory under Legal Seal.</p> <p>Contact the Medical Microbiologist prior to legal specimen collection at 416-235-5806.</p>

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Newborn Screening				Testing no longer available from the OPHL.	Contact Children's Hospital of Eastern Ontario at 613-738-3222.			
Nocardiosis <i>Nocardia asteroides</i> , <i>Nocardia</i> spp.	M04	See Fungal Culture, Systemic or Subcutaneous						Specify Nocardia on test requisition.
	M07	Pure culture	Appropriate agar medium	Identification	Mycology			
	M01	Pure culture	Appropriate agar medium	Susceptibility	Mycology			
Norovirus (Norwalk Virus)	V06	Faeces	Sterile container	Electron Microscopy	Virus Detection	3 days	Within 3 days	For optimal recovery, collect specimen within 2 days of onset.
Onchocerciasis <i>Onchocerca volvulus</i> <i>Dipetalonema</i> <i>Streptocerca</i>	P03	Excised nodules or material from nodules; adult worms; microfilariae from skin snips	Sterile container	Microscopy for microfilariae and adult worm	Parasitology	2 days	Within 2 days	See also Filariasis Skin snips best taken from iliac crest or scapula.
Paracoccidiomycosis <i>Paracoccidioides brasiliensis</i>	S05	Blood, clotted or serum	BL-S		Immunodiagnosics Referred to CDC, Atlanta, Georgia.	4 – 6 weeks	4 – 6 weeks	

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Paragonimiasis <i>Paragonimus westermani</i>	P04	Faeces in SAF Preservative	Para	Microscopy for ova	Parasitology	3 days	Within 3 days	
	P03	Sputum	Para	Microscopy for ova	Parasitology	3 days	Within 3 days	
	S06	Blood, clotted or serum	BL-S	Western Blot	Immunodiagnosics Referred to the National Reference Centre for Parasitology, Montreal, Quebec.	7 days	Within 7 days	
Parainfluenza Virus Infection	V29	See Respiratory Infections, Acute Viral						
Paralytic Shellfish Poisoning (PSP)		See Notes						Consult Environmental Microbiology at 416-235-5716 or your local Public Health Laboratory.
Parvovirus Infection (B19, Fifth's Disease, Erythema infectiosum)	V30	Blood, clotted or serum	BL-S	Virus Serology - CLIA, IgG, IgM	Virology	2 days	Within 3 days	
Pediculosis		Adult louse, nymphs or eggs See Arthropod Infestation	Screw-capped vial or bottle with 70% alcohol	Microscopy	Parasitology	3 days	Within 3 days	

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Penicilliosis <i>(P.marneffei)</i>	M07	Pure culture	Appropriate agar medium	Identification	Mycology			
Pinworm		See Enterobiasis						
Plague <i>Yersinia pestis</i>		See notes						Consult Medical Microbiologist at 416-235-5841 or your local Public Health Laboratory prior to collection of specimen.
	S04	Blood, clotted or serum	BL-S	Serology	Immunodiagnosics Referred to CDC, Fort Collins, Colorado.	7 days	Within 7 days	
Pneumocystis pneumonia (PCP), <i>Pneumocystis carinii</i>	P03	Bronchial wash, biopsy or autopsy material (lung or other tissue)	Sterile container with sterile normal saline	Fluorescent microscopy	Parasitology	1 day	1 day	
		Slide of tracheo-bronchial mucus on slide	Slide mailer	Flourescent microscopy	Parasitology	1 day	1 day	Delay in receipt of slide directly affects accuracy of determination.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Pneumonia, Viral See also Bronchiolitis of Infants Numerous viruses including <i>Adenovirus</i> , <i>Influenza</i> , <i>Parainfluenza</i> , <i>Respiratory Syncytial Virus (RSV)</i> , etc.	V42	Nasopharyngeal swab	Virus respiratory	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	
		Throat swab	Virus culture	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	
		Auger suction; nasopharyngeal aspirates; bronchial washing	Original collection vial and tube; sterile container	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	
		Autopsy material (lung)	Virus Culture Kit (Tissue)	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
	V41			Serology is not available for Adenovirus, Parainfluenza 1,2,3, or RSV				
Poliomyelitis Polioviruses (Type 1,2,3)	V07	Throat Swab	Virus culture	Virus isolation	Virus Detection	Preliminary 7 days	Within 7 days	For any suspected cases of Polio, contact the Medical Microbiologist at 416-235-5726 or your local Public Health Laboratory.
		Faeces	Virus - Enteric	Virus isolation	Virus Detection	Preliminary 7 days	Within 7 days	

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
		Autopsy material (brain, spinal cord, intestinal content)	Virus Culture Kit (Tissue)	Virus isolation	Virus Detection	Preliminary 7 days	Within 7 days	
Poxvirus Infections		See <i>Molluscum contagiosum</i>						Consult Medical Director, Public Health Laboratories at 416-235-5941 in case of suspected smallpox. Smallpox was eradicated in 1977.
Prenatal Screening See also Rubella, Hepatitis, HIV & Syphilis	V37	Blood, clotted or serum SST tube (tiger-top) preferred for whole blood (10 ml)	Prenatal kit	Rubella IgG	Prenatal Laboratory	6 days	Within 6 days	Prenatal screening form should not be used to submit samples when there is a clear indication of disease in pregnancy. Use the OPHL test requisition 97-44. The Prenatal Requisition 1739-44 is only used for routine screening.
	V13			Hepatitis B		6 days	Within 6 days	
	S17			Syphilis		6 days	Within 6 days	
	HIV			HIV		6 days	Within 6 days	
Q-Fever <i>Coxiella burnetti</i>	V31	Blood, clotted or serum	BL-S	Virus serology by IFA (IgG, IgM)	Immunodiagnostics	7 days	Within 7 days	
Rabies Rabies Virus	V32	Blood, clotted or serum	BL-S	RFFIT (Rapid fluorescent focus inhibition test)	Virology	7 days	Within 7 days	Test is for presence of antibody only.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Rashes, Viral (Measles, Rubella, Parvovirus*, Chickenpox, Herpes simplex)	V42	Throat swab; swab from lesion; vesicle fluid NP swab	Virus culture Virus respiratory	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	* Parvovirus Culture is not available
		Air-dried slide on slide	Slide mailer	Electron Microscopy	Virology	3 days	Within 3 days	Do not fix slides.
	V41	Blood, clotted or serum	BL-S	EIA, (IgG, IgM)	Virology	5 days	Within 5 days	Indicate whether vesicular or maculopapular rash.
Relapsing Fever, Louse or Tick-borne <i>Borrelia</i> spp.				Testing not performed at the OPHL.				
Respiratory Infections, Acute Viral Numerous Viruses including, Adenovirus, Rhinovirus, Coxsackievirus, Parainfluenza Virus, Influenza Virus and Respiratory Syncytial Virus (RSV)	V01 V34 V42 V29 V23 V33	Nasopharyngeal swab, throat swab	Virus respiratory	Virus isolation, direct antigen detection Direct antigen testing is available for selected viruses.	Virus Detection	Preliminary 7 days	Within 10 days	For Outbreaks contact the Virus Detection Laboratory, in Toronto at 416-235-5730 or your local Public Health Laboratory.
		Autopsy material (lung)	Virus Culture Kit (Tissue)	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
	V41	Blood, clotted or serum	BL-S	CF or EIA (IgG/IgM) as applicable.*	Virology	7 days	Within 7 days	* Serology is only available for Influenza and Mycoplasma pneumoniae and requires appropriate clinical information accompanying acute and convalescent specimens collected 7-10 days apart

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Rickettsial Infections Rocky Mountain Spotted Fever, Murine Typhus	V35	Blood, clotted or serum	BL-S	Serology – IFA; IgG, IgM	Immunodiagnosics	7 days	Within 7 days	Acute and convalescent serum required.
Rubella German Measles	V37	Blood, clotted or serum	BL-S	Virus serology -EIA; (IgG, IgM)	Virology	7 days	Within 7 days	Specify whether test is for Immune status (IgG) or diagnosis of acute infection (IgM) with clinical information.
				IgG avidity	Referred to NML, Winnipeg, MB.			This test must be requested and approved by the Medical Microbiologist, in order to have this testing performed. Contact Dr. Graham Tipples at 204-789-6080.
Rubella Congenital Rubella Syndrome	V37	Throat swab; nasopharyngeal swab/secretion	Virus respiratory	Virus isolation	Virus Detection	Preliminary 7 days 1 week	Within 21 days Within 1 week	

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Abortion		Urine	Sterile container	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
					PCR referred to NML, Winnipeg, MB.	1 week	Within 1 week	
		Aborted material; placenta, autopsy material	Virus Culture Kit (Tissue)	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
					PCR referred to NML, Winnipeg, MB	1 week	Within 1 week	
		Blood, clotted or serum	BL-S	Virus serology - EIA;(IgG, IgM)	Virology	7 days	Within 7 days	If congenital infection is suspected, submit a maternal serum specimen as well as one from the infant to aid in the interpretation of results.
SARS (Severe Acute Respiratory Syndrome)		Blood, clotted or serum	BL-S		WRAPS			Contact your local Public Health Laboratory prior to submitting specimens. The patient must fulfill the clinical case definition as specified by Health Canada. As SARS is a reportable disease suspected cases must be reported to your local Medical Officer of Health.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
		Nasopharyngeal aspirate/swab	Virus-Resp	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	Contact the local Health Unit and Head, Virus Detection at 416-235-5730 prior to submitting specimen. Submit travel history and clinical information. As SARS is a reportable disease suspected cases must be reported to your local Medical Officer of Health.
				Direct antigen Detection (Flu A, B)		1 day	1 day	
				rRT-PCR	Molecular Diagnostics	1 day	Preliminary 1 day, confirmation sent to NML, Winnipeg, MB.	
		Bronchial wash	Sterile container	Virus isolation	Virus Detection	Preliminary 7 days	Within 10 days	
				rRT-PCR	Molecular Diagnostics	1 day	Preliminary 1 day, confirmation sent to NML, Winnipeg, MB.	
		SARS (Severe Acute Respiratory)		Faeces (gastroenteritis present)	Sterile container	Virus isolation	Virus Detection	Preliminary 7 days

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Syndrome) (continued)				rRT-PCR	Molecular Diagnostics	1 day	Preliminary 1 day, confirmation sent to NML, Winnipeg, MB.	submitting specimen. Submit travel history and clinical information. As SARS is a reportable disease suspected cases must be reported to your local Medical Officer of Health.
Scabies <i>Sarcoptes scabiei</i>	P02	Scrapings of skin at track margins	Screw-capped jar with 70% alcohol	Microscopy for mites	Parasitology	2 days	Within 2 days	Use flat edge of scalpel or tongue depressor (if skin is very flaky).
Schistosomal dermatitis (Swimmer's Itch)	P02	Snails	Clean container	Microscopy for larvae of blood flukes of water birds	Parasitology	2 days	Within 2 days	Consult your local Public Health Laboratory or Parasitology, Central Laboratory at 416-235-5722 prior to collection.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Schistosomiasis								
<i>Schistosoma haematobium</i>	P03	Urine collected at midday (minimum 30 mL), on three consecutive days	Sterile container	Microscopy for ova	Parasitology	2 days	Within 2 days	Collect specimens 2 hours before and after midday as numbers of ova excreted in Urine peak at that time. Preferably collect the last portion voided.
	S06	Blood, clotted or serum	BL-S	EIA, Western Blot	Immunodiagnosics Referred to National Reference Center for Parasitology, Montreal, Quebec.	4 – 6 weeks	4 – 6 weeks	
	S06	Blood, clotted or serum	BL-S	EIA, Western Blot	Immunodiagnosics Referred to National Reference Center for Parasitology, Montreal, Quebec.	7 days	Within 7 days	
<i>S. japonicum, S. mansoni</i>	P04	Faeces in SAF fixative	Para	Microscopy for ova	Parasitology	3 days	Within 3 days	

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Streptococcus Group A Invasive	B02 Ref. ID	Pure culture*	Appropriate agar medium	Confirmation, susceptibility testing, M and T protein typing, Molecular typing (PFGE)	Reference Identification and Susceptibility	NA	Confirmation and Susceptibility: 2 days	Typing only performed in outbreak situation. M & T protein typing is performed on isolates from systemic sites and necrotizing fasciitis cases. *Use Reference ID Requisition (Green).
Streptococcus Group A Outbreak	B02	Wound; blood; meninges; body fluid; throat swab	Amies/stuarts	Culture and susceptibility testing	Respiratory	2 days	Within 5 days	Maximum storage / transit time at 2 ⁰ C to 8 ⁰ C is within 3 days of collection. Notify Respiratory and Legionnaires Laboratory at 416-235-5711 before submitting.
<i>Streptococcus pneumoniae</i>	B02 Ref. ID	Pure culture*	Appropriate agar medium	Confirmation, susceptibility testing (incl. penicillin MIC).	Reference Identification and Susceptibility	NA	Confirmation and Susceptibility: 2 days	*Use Reference ID Requisition (Green).

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Strongyloidiasis <i>Strongyloides stercoralis</i>		See Diarrhoea			Parasitology	3 days	Within 3 days	Consult Parasitology, Central Laboratory at 416-235-5722 prior to specimen collection. If disseminated Strongyloidiasis is suspected, submit bronchial washings and urine samples in addition to faeces.
	S06	Blood, clotted or serum	BL-S	EIA	Immunodiagnosics Referred to National Reference Center for Parasitology, Montreal, Quebec.	4 – 6 weeks	4 – 6 weeks	
Subacute Sclerosing Panencephalitis (SSPE)	V24	Blood, clotted or serum	BL-S	EIA (IgG, IgM)	Virology	7 days	Within 7 days	High titres of measles antibody are usually present in serum and CSF.
		Cerebrospinal fluid (CSF)	Sterile tube	Serology-EIA (IgG / IgM)	Virology	7 days	Within 7 days	
Syphilis <i>Treponema pallidum</i>	S08	Serous exudate from primary lesion (chancres) or secondary lesions	DFA (Direct fluorescence) with slide mailer	Microscopy for <i>Treponema pallidum</i>	Immunodiagnosics	2 days	Within 2 days	Details are provided in the Syphilis by Direct Fluorescence Collection Guidelines.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
	S17	Blood, clotted or serum (SST or tiger-top preferred)	BL-S	CMIA (RPR), TPPA, FTA-ABS Reactive Syphilis screen test CMIA is automatically tested by confirmatory procedures and RPR.	Virology Immunodiagnosics	6 days 7 days	Within 6 days Within 7 days	
	S18	Cerebrospinal fluid (CSF)	Sterile tube	VDRL; FTA-ABS	Virology	7 days	Within 7 days	
Taeniasis (Beef Tape Worm) <i>Taenia saginata</i> (Pork Tape Worm) <i>Taenia solium</i>	S06	Blood, clotted or serum See also Diarrhoea	BL-S, CSF	Western Blot	Immunodiagnosics Referred to the National Centre for Parasitology, Montreal, Quebec.			
Tetanus <i>Clostridium tetani</i>	B02 Ref. ID	Pure culture *	Appropriate agar medium	Identification and susceptibility	Reference Identification and Susceptibility	5 days	Within 5 days	*Use Reference ID Requisition (Green).

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
	B08	Serum	BL-S	Tetanus Toxoid IgG Enzyme Immunoassay	Molecular Surveillance	2-3 weeks	2-3 weeks	Testing is available in the rare event of an adverse reaction to tetanus vaccine or the possibility of humoral immunodeficiency in the patient. This must be indicated on the test requisition in order for testing to be performed.
TORCH Toxoplasmosis Rubella, Cytomegalovirus and Herpes simplex	V38	Blood, clotted or serum	BL-S	Virus serology – EIA (IgG, IgM) Toxoplasmosis IgM on request.	Immunodiagnosics (Toxo) / Virology	5 days	Within 5 days	<ul style="list-style-type: none"> Indicate whether test is for evidence of past exposure (immunity-IgG) or for diagnosis (IgM). If congenital infection is suspected, submit a maternal serum specimen as well as one from the infant to aid in the result interpretation.
		Autopsy material; placenta	Virus Culture Kit (Tissue)	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
Toxic Shock Syndrome (TSS) Staphylococcus aureus	B02 Ref. ID	Pure Culture of <i>S. aureus</i>	Appropriate agar medium	Toxin detection	Reference Identification & Susceptibility	NA	Within 7 days	*Use Reference ID Requisition (Green).
Toxocariasis (Visceral Larva Migrans) <i>Toxocara canis</i> <i>Toxocara cati</i>	S06	Blood, clotted or serum	BL-S	Serology-EIA	Immunodiagnosics	7 days	Within 7 days	

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Toxoplasmosis <i>Toxoplasma gondii</i>	S09	Blood, clotted or serum	BL-S	Agglutination, EIA, IFA	Immunodiagnosics	7 days	Within 7 days	Indicate whether test is for Diagnosis or Immunity.
	P03	Biopsy material	Sterile container	Microscopy	Parasitology	2 days	Within 2 days	Consult Parasitology at 416-235-5722 prior to collection
		Cerebrospinal fluid (CSF)		Test no longer available at the OPHL.	Immunodiagnosics			
Trace Metals								
Aluminum – Serum	C01	Serum (3–5mL) Lavendar Top Tube #367863	Royal blue vacutainer No anticoagulants	Atomic absorption spectroscopy	Chemistry			
Aluminum – Urine	C01	24 hour urine (10–25mL aliquot)	Sterile urine collection vial	Atomic absorption spectroscopy	Chemistry			
Lead – Blood	C03	Whole blood, (3–5mL) Green Top Tube #367878	Royal blue or green vacutainer–with heparin	Atomic absorption spectroscopy	Chemistry			
Lead – Urine	C03	24 hour urine (10–25mL Aliquot)	Sterile urine collection vial	Atomic absorption spectroscopy	Chemistry			
Free Erythrocyte	C02	Whole blood (3–5mL)	Royal blue or	Hemato fluorometry	Chemistry			

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
Protoporphyrin (FEP)			green vacutainer–with heparin					
Trichinosis <i>Trichinella spiralis</i>	P03	Biopsy material (gastrocnemius muscle)	Sterile container	Microscopy	Parasitology	3 days	Within 3 days	
	S06	Blood, clotted or serum	BL–S	Complement fixation	Immunodiagnosics	7 days	Within 7 days	
Trichomoniasis <i>T. vaginalis</i>	B11	Vaginal smear	Slide mailer	Microscopy	STI	2 days	2 days	When making a direct smear, roll (do not rub) swab of exudate onto slide so that Trichomonal cells are not destroyed.
Trypanosomiasis African <i>Trypanosoma rhodesiense</i> <i>T. gambiense</i>	P03	Blood films, thick and thin (unstained)	Slide mailer	Microscopy	Parasitology	2 days	Within 2 days	
		Lymph node fluid aspirate	Sterile container	Microscopy	Parasitology	2 days	Within 2 days	
	S06	Blood, clotted or serum	BL–S	CATT	Immunodiagnosics Referred to the National Reference Centre for Parasitology, Montreal, Quebec.			

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
American, (Chagas' disease) <i>Trypanosoma cruzi</i>	S06	Blood, clotted or serum	BL-S	IFA	Immunodiagnosics Referred to the National Reference Centre for Parasitology, Montreal, Quebec.			
Tularemia <i>Francisella tularensis</i>	S04	See notes			Reference Identification & Susceptibility			Consult Medical Bacteriologist at 416-235-5841 or your local Public Health Laboratory prior to collection of specimen.
		Blood, clotted or serum	BL-S	Agglutination	Immunodiagnosics	7 days	Within 7 days	
Vancomycin-Resistant Enterococcus (VRE)	B01 Ref. ID	Pure culture*	Appropriate agar medium	Identification, confirmation of VRE, PCR detection of VanA, VanB, VanC, molecular typing (PFGE)	Reference Identification and Susceptibility	NA	Identification and Confirmation: 2 days**	The Public Health Laboratories will assist health care facilities in providing laboratory services for the detection of VRE in outbreak situations. Contact Head, Reference Identification & Susceptibility at 416-235-5706, prior to shipping. *Use Reference ID Requisition (Green). ** PCR and molecular typing only performed upon request in outbreak situations

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
	B02	Rectal swab; environmental samples	Amies/stuarts	Culture and susceptibility testing	Respiratory	3 days	Within 5 days	Maximum storage / transit time at 2 ⁰ C to 8 ⁰ C is within 3 days of collection. Notify OPHL before submitting
Varicella zoster Virus (VZV) Infections Chickenpox, Herpes zoster, Shingles	V39	Vesicle/lesion fluid or swab	Virus culture	Virus isolation	Virus Detection	Preliminary 7 days	Within 21 days	
		Vesicle slide on slide (unfixed)	Slide mailer	Electron Microscopy	Virus Detection	3 days	Within 3 days	
	V39	Blood, clotted or serum	BL-S	Virus serology, EIA, (IgG, IgM)	Virology	5 days	Within 5 days	Indicate whether test is for Immunity or Diagnosis. To ensure STAT (timely) testing in cases of VZV exposure in pregnancy or other situations CALL your local Public Health Laboratory prior to submission.
Viral Hemorrhagic Fever (Lassa Fever Virus, Ebola Virus, Marburg Virus, etc).	V09	See notes			WRAPS			<ul style="list-style-type: none"> • This requires activation of the Viral Hemorrhagic Fever Contingency Plan. • Contact your local Medical Officer of Health and the Medical Microbiologist at 416-235-5726 prior to collecting specimens.

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Viral Studies	V41	Blood	BL-S	EIA for specific viral IGG or IGM as applicable	Virology	7 days	Within 7 days	Please indicate the name(s) of the suspected viral etiological agent(s) under investigation. Clinical information alone is insufficient for test determination. For assistance please contact Customer Service toll free at 1-877-604-4567 or 416-235 6556 and they will direct you to the appropriate resource.
West Nile Encephalitis	V02	Blood, clotted or serum CSF		West Nile Ab (IgM) on serum or CSF West Nile Ag (PCR)*	WRAPS	2 days*	Preliminary result 2 days* Confirmatory result 10 days*	*During off season TAT will vary. Submit travel history, clinical information and history of mosquito bite(s).
				IgG avidity	Referred to NML, Winnipeg, MB.			Contact Head Technologist of WRAPS at 416-235-6044 prior to submitting specimen for special circumstances.
Whipple's Disease		Tissue/biopsy (should be reviewed by pathologist prior to submission)	Sterile container	PCR	Reference Identification and Susceptibility	7 days	Within 7 days	Consult Reference Identification and Susceptibility Testing at 416-235-5706 prior to submission. CSF and Blood are not suitable specimens.
Whooping Cough <i>Bordetella pertussis, parapertussis</i>	B10	Nasopharyngeal swab	Bordetella pertussis six-pack	PCR	Respiratory Bacteriology	3 days	Within 3 days	PCR transport medium is colourless. Do not use viral transport medium which is pink in color. Maximum storage / transit time at 2 ^o C to 8 ^o C is within 5 days of collection.
			Bordetella pertussis	Culture	Respiratory Bacteriology	3 days	Within 5 days	Use special charcoal transport medium.

Disease / Syndrome / Causal Agent / Test	Test Code	Specimens	Collection Kit	Test Available	Section	TAT Negative Results Reported	TAT Positive or Confirmatory Results Reported	Notes *
	* Ref. ID	Pure culture	Appropriate medium	Identification confirmation	Respiratory Bacteriology			*Use Reference ID Requisition (Green).
	S04	Blood, clotted or serum	BL-S					Testing is no longer available at the Public Health Laboratory. Serological testing is not recommended in the diagnosis of Pertussis. Submit swab PCR.
Yersinia Infections <i>Yersinia</i> spp.	S04	Blood, clotted or serum	BL-S	Agglutination	Immunodiagnosics	7 days	Within 7 days	