

Clinical Testing Parasitology

Ova and Parasite Testing

Specimen Requirements

Routine ova and parasite (O&P) and *Cryptosporidium*: Submit specimens using the Ultra Ecofix® one vial system. Adhere to the directions given. This O&P fixative is available from the Illinois Department of Public Health. Acid-fast stained fecal smears are acceptable for *Cryptosporidium* and *Cyclospora*. Fresh stool specimens must be received in less than two hours. The Illinois Department of Public Health laboratory also will identify adult helminths.

Note: *The two vial system of 10 percent formalin and modified polyvinyl alcohol collecting medium (PVA) is no longer available. Use the one vial Ultra Ecofix®. Formalin fixed specimens will not be accepted.*

Information Required

Complete the Communicable Diseases Laboratory Test Requisition (IL482-1039). Information must include the patient identification, name and address of the provider, date of collection, and the name of the test requested.

Collection Materials

See Appendix C for supplies.

Test Methodology

Routine O&P specimens received in the one vial Ultra Ecofix® are examined by the ethyl acetate concentration and Trichrome permanent stain techniques from the same preservative vial. Examination for *Cryptosporidium* or *Cyclospora* is performed only when requested. Examination for pinworms can be performed from paddle or tape preparation.

Interfering Substances/Conditions

Antibiotics or over-the-counter remedies the patient may be taking can preclude the successful isolation and identification of suspected pathogens. Additionally, over-the-counter diarrheal remedies containing pectin or other solidifying compounds, antacids, bismuth and mineral oil can render clinical stools unsuitable for parasitological identification.

Criteria for Rejection

Inadequate amount of specimen; specimen not labeled with full patient name or ID number; improperly preserved specimens; specimens submitted in out-dated preservatives.

Availability

Parasitology O&P screening is available to all county and local health departments. Confirmation of parasites is available for hospitals.

Immunoassay Testing

Specimen Requirements

Immunoassay testing for *Giardia lamblia* and *Cryptosporidium parvum* is available for outbreaks. Notify the Illinois Department of Public Health before submitting outbreak specimens.

Collection Materials

Submit the specimen in an O & P Collection fixative. See Appendix C.

Information Required

Complete the Communicable Diseases Laboratory Test Requisition (IL482-1039). Information must include the patient identification, name and address of the provider, date of collection, and name of test requested.

Test Methodology

Monoclonal antibody for the detection of antibody in aqueous fecal extracts.

Interfering Substances/Conditions

Not applicable.

Criteria for Rejection

Inadequate amount of specimen; specimen not labeled with full patient name or ID number; concentrated O & P specimens; improperly preserved specimens (e.g. outdated or improper fixative).

Availability

Testing is available for outbreaks.

Instructions for Fecal Specimens for Ova and Parasites Collection and Submission

Please review the following instructions with your patient(s) to ensure proper specimen collection:

Using the one vial system **PARA-PAK® ULTRA Ecofix**

1. The kit consists of **one vial of PARA-PAK® ULTRA Ecofix preservative**, a laboratory test requisition, a plastic biohazard bag or 95kPa bag with absorbent material, a fiberboard mailing box and an instruction sheet. Write the patient's full name and/or unique identifier on the specimen vial.
2. Collect feces (stool) into a dry container or on wax paper.

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3. Remove the cap from the vial and use the collection spoon provided in the cap. Add a sufficient amount of stool to the vial to bring the liquid level to the “FILL TO HERE” line on the tube. To ensure adequate sampling of a formed stool, **material should be collected from the sides, ends and middle of the bolus**. Break up solid stool as much as possible. Tighten the cap on the bottle securely and shake vigorously. When mixing is completed the specimen should appear homogenous.
4. Complete all information requested on the test requisition. The patient identifier on the test requisition must match the identifier given on the specimen. For valid results, include the date of collection.
5.
 - a. By ground transport
 - i. Wrap specimen(s) individually in absorbent material.
 - ii. Place wrapped specimen(s) into a biohazard labeled bag and seal securely.
 - iii. Place the test requisition(s) in the biohazard bag outside pouch so that it does not come in contact with the specimen sealed inside the bag.
 - iv. Place the sealed biohazard bag and test requisition(s) inside the shipping container.
 - v. The shipping container must be rigid such as a cooler and labeled with the UN 3373 Biological Substance Category B marking.
 - vi. Close securely.
 - b. Commercial carrier by ground/air transport
 - i. Wrap specimen(s) individually in absorbent material.
 - ii. Place the wrapped specimen(s) inside a biohazard labeled 95 kPa bag and seal following the instructions on the bag.
 - iii. Place the test requisition(s) in the 95 kPa bag outside pouch so that it does not come in contact with the specimen sealed in the bag.
 - iv. Place the sealed 95 kPa bag and completed test requisitions(s) inside the outer shipping container and close securely.
 - v. Label the outer shipping container with the appropriate Illinois Department of Public Health laboratory address.
 - vi. Complete the return address section to include the name of the person shipping the package, business name and address and a business phone number.
 - vii. The shipping container must include the UN3373 Biological Substance Category B marking.

Ship to:

Illinois Department of Public Health Laboratory
2121 W. Taylor St.
Chicago, IL 60612-7260
Phone: 312-793-4760
Fax: 312-793-1322

Illinois Department of Public Health Laboratory
825 N. Rutledge St.
Springfield, IL 62702
Phone: 217-782-6562
Fax: 217-524-7924

Clinical Testing Parasitology

Malaria/Blood Parasites

Specimen Requirements

Submit stained thick and thin air-dried blood smears and a purple-capped (EDTA) blood tube. Complete patient demographics (patient's first and last name, date of birth, ethnicity, date of onset, **travel history-country and dates.**

Test Methodology

Microscopic examination is available at the Illinois Department of Public Health's Springfield and Chicago laboratories.

Interfering Substances/Conditions

Blood films should be prepared as quickly as possible after specimen collection for optimum parasite preservation.

Criteria for Rejection

Specimen not properly identified with patient identification.

Availability

All hospitals are required to send positive blood films to the Illinois Department of Public Health's Springfield or Chicago laboratories for confirmation of malaria.

Instructions for Malarial Specimen Submission

1. Use a lavender/purple vacutainer tube containing EDTA anticoagulant. Collect a minimum of 1.0 mL of blood. Mix specimen(s) by gentle inversion five to 10 times.
2. If sending thick and thin smears, package them in a plastic/cardboard slide container. Secure with tape.
3. Label the specimen with the patient's full name and date of birth.
4. Complete all information on the Communicable Diseases Laboratory Test Requisition using black ink in capital letters. Include patient travel history on all malaria requests.
5.
 - a. By ground transport
 - i. Wrap specimen(s) individually in absorbent material.
 - ii. Place wrapped specimen(s) into a biohazard labeled bag and seal securely.
 - iii. Place the test requisition(s) in the biohazard bag outside pouch so that it does not come in contact with the specimen sealed inside the bag.
 - iv. Place the sealed biohazard bag and test requisition(s) inside the shipping container.
 - v. The shipping container must be rigid such as a cooler and labeled with the UN 3373 Biological Substance Category B marking.
 - vi. Close securely.
 - b. Commercial carrier by ground/air transport
 - i. Wrap specimen(s) individually in absorbent material.
 - ii. Place the wrapped specimen(s) inside a biohazard labeled 95 kPa bag and seal following the instructions on the bag.
 - iii. Place the test requisition(s) in the 95 kPa bag outside pouch so that it does not come in contact with the specimen sealed in the bag.
 - iv. Place the sealed 95 kPa bag and completed test requisitions(s) inside the outer shipping container and close securely.
 - v. Label the outer shipping container with the appropriate Illinois Department of Public Health laboratory address.
 - vi. Complete the return address section to include the name of the person shipping the package, business name and address and a business phone number.
 - vii. The shipping container must include the UN3373 Biological Substance Category B marking.
6. If the whole blood specimen(s) cannot be shipped immediately, store at 4 C to 8 C (refrigerator).
7. **Blood specimens should reach the Springfield or Chicago laboratory within three days of collection.**

Ship to:

Illinois Department of Public Health Laboratory
Parasitology
825 N. Rutledge St.
Springfield, IL 62702-4910
Phone: 217-782-6562
Fax: 217-557-2618

Illinois Department of Public Health Laboratory
Parasitology
2121 W. Taylor St.
Chicago, IL 61612-4224
Phone: 312-793-4760
Fax: 312-793-1322

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Table 3. Parasitology

Disease or Agent	Feces	Blood Film	Serum	Performed at	TAT (Days)
Amebiasis	X		[X]	Ch, Sp	3
Babesiosis		X	[X]	Ch	2
Chagas disease		X	[X]	Ch	2
Cryptosporidiosis	X			Ch, Sp	3
Cyclospora	X			Ch, Sp	3
Cysticercosis			[X]	Ch	2
Echinococcosis			[X]	Ch	2
Giardiasis	X			Ch, Sp	3
Leishmaniasis		X	[X]	Ch	2
Malaria		X	[X]	Ch, Sp	2
Meningoencephalitis (amoebic)			[X]	Ch	2
Paragonimiasis	X		[X]	Ch, Sp	2
Schistosomiasis	X		[X]	Ch, Sp	2
Strongyloidiasis	X		[X]	Ch, Sp	2
Taeniasis	X		[X]	Ch, Sp	2
Toxoplasmosis			[X]	Ch	5
Trichinelliasis			[X]	Ch	5
Trypanosomiasis		X	[X]	Ch	2

[X] = contact laboratory before submitting, referred to CDC, TAT may vary from those indicated.