



Florida Department of Health

Measles Virus
Laboratory Diagnosis

Focus Area: Collection, Packaging
and Shipping of Laboratory
Specimens

Guidance document number 2015-01

Measles Virus Diagnostic Specimen Collection, Packaging and Shipping
Guidance for Laboratories and County Health Departments

Version 1.2 May 14, 2019

Summary:

- **Authorization:** Contact your local County Health Department for authorization prior to collecting and shipping diagnostic specimens for measles virus testing. **Testing requires prior approval before specimen submission.**
- **Specimen Selection:** Specimens for rRT-PCR are preferred. Serum for IgM and/or IgG testing can also be collected.
- **Specimen Collection:** Specimens for rRT-PCR testing should be collected as soon as possible after rash preferably within 3 days following onset of rash. Serum specimens for IgM testing should be collected 3 days or more following onset of rash. Serum for IgM and/or IgG should be collected in tubes without additives-either a plain, red-top tube or a serum separator tube (red/gray mottled top).
- **Packaging - Transport by Commercial Carrier:** It is recommended that all suspect measles diagnostic specimens be packaged according to IATA/DOT Packaging Instructions 650 for Biological substance, Category B agents which requires specimens be packed in a basic triple packaging system with a primary watertight container wrapped with absorbent material, secondary watertight container and an outer shipping package.
- **Packaging - Transport by Local Courier:** As above, specimens should be packaged in a basic triple packaging system which consists of a primary watertight container wrapped with absorbent material, secondary watertight container and an outer shipping package.
- **Laboratory Requisition:** Complete and attach DOH Form 1847 and mark the appropriate test under the VIROLOGY section: Measles PCR (#1755), measles IgM (#1750), measles IgG (#1740). In the "Comment/Additional Information" section in the lower right-hand corner of the form add any pertinent patient information such as vaccination status, symptoms, and onset dates of fever and rash. Please do not use electronic ordering for measles testing requests.

• **Shipping to BPHL - Jacksonville:**

Bureau of Public Health Laboratories-Jacksonville
1217 N. Pearl Street
Jacksonville, FL 32202
Attention: Valerie Mock

For Additional Information: Contact Valerie Mock at 904-791-1539 or 904-637-9284
Alternate contact Pamela Colarusso at 904-791-1540

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• **Shipping to BPHL - Tampa:**

Bureau of Public Health Laboratories-Tampa
3602 Spectrum Blvd
Tampa, FL 33612
Attention: Edgar Kopp

For Additional Information: Contact Edgar Kopp at 813-233-2260 or 813-285-1491
Alternate contact Lea Heberlein-Larson at 813-233-2307

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- Specimens delivered to BPHL-Miami will be shipped overnight to BPHL-Jacksonville.
- Serum specimens for IgM and/or IgG testing delivered to BPHL-Tampa will be shipped overnight to BPHL-Jacksonville.

Authorization

- Contact your local County Health Department prior to collecting any specimens from suspect measles cases. **Testing requires prior approval before specimen submission.**

Specimen Selection

- Specimens for Real-time RT-PCR (rRT-PCR) collected as soon as possible after rash through 3 days following onset of rash are preferred. However, please note that virus has been detected as late as 10-14 after rash onset.
- Specimens for IgM testing are recommended for unimmunized patients, patients born before 1957, or patients with questionable or unknown immunization status. Symptoms should be clearly compatible with measles and exposure suspected. This test should not be performed on immunized individuals (any doses of MMR).
- When warranted, specimens for IgG testing may be performed on patients with immunization (any doses of MMR), no travel, or exposure to a confirmed case to determine immune status.

Specimen Collection

- Specimen collection should be performed following standard precautions. Wear appropriate personal protective equipment (PPE) at all times while collecting and handling specimens.

- Specimens for rRT-PCR: Throat (oropharyngeal), nasal or NP (nasopharyngeal) swabs are preferred. Swabs must be in 1-3 ml of viral transport medium (VTM). Urine is also acceptable (5-10 ml) in a sterile leak proof tube. **Please do not submit urine in urine collection cups as these tend to leak during transport. Urine should be transferred to a sterile tube(s) with a secure closure to prevent leakage in transport. An example of a preferred urine tube is the BD vacutainer urine collection tube, BD #364979, Fisher Scientific catalog #14-375-138. These tubes have a 10ml capacity, therefore multiple tubes may be necessary. Alternatively, a 50 ml sterile tube sealed with parafilm (flexible plastic covering) may be used, such as Fisherbrand Fisher Scientific catalog #06-443-20.** Collect specimens as soon as possible after rash, preferably within 3 days following onset of rash.
- Specimens for IgM: Serum (2 ml) in tubes without additives-either a plain, red-top tube or a serum separator tube (red/gray marble top). Collect specimen 3 days or more after rash onset.
- Specimens for IgG: Serum (2 ml) in tubes without additives-either a plain, red-top tube or a serum separator tube (red/gray marble top).
- Place each tube in a separate zip-seal bag.
- Store specimens at 4°C until shipment. **DO NOT FREEZE**
- Ship immediately on cold packs.

Packaging requirements - Transport by Commercial Carrier

Package specimens in combination packaging according to IATA/DOT regulations.

NOTE: Per these regulations anyone who handles, offers for transport, or transports specimens must be trained to do so.

General Packaging Requirements

- We recommend that you package the specimens as a Category B agent using IATA Packaging Instructions 650 for Category B Agents which requires specimens be packed in a basic triple packaging system with a primary watertight container wrapped with absorbent material, secondary watertight container and an outer shipping package.
- Enclose an itemized list of contents between the secondary packaging and the outer packaging.
- Package on cold packs.

Inner Packaging Requirements

- Primary receptacle(s) must be watertight. An example of a watertight primary receptacle is a tube sealed with parafilm (flexible plastic covering).
- Secondary receptacle must be watertight. An example of a watertight secondary receptacle is a zip closure bag. If using a zip closure bag, place only one specimen per bag.
- The primary or secondary receptacle must also be pressure compliant (95kPa). An example of a preferred pressure compliant secondary receptacle is Therapak 95kPa compliant transport bags, Fisher Scientific catalog #22-130-021.
- A common inner packaging is one non-watertight tube placed in a zip closure bag (the primary watertight receptacle). Multiple zip closure bags are then placed in one pressure compliant bag (the secondary watertight receptacle).

- An itemized list of the contents enclosed between the secondary receptacle and the outer packaging.
- Absorbent material must be placed between the primary receptacle(s) and secondary receptacle and be of sufficient quantity to absorb the entire contents of the primary receptacle(s).

Outer Packaging Requirements

- Package must be rigid.
- Package must be properly labeled with the UN 3373 marking, the shipping name, “Biological Substance, Category B”, and orientation labels.
- Package must pass required testing.

Packaging Requirements - Transport by Local Courier

Package specimens in combination packaging according to 49 CFR 173.6(a)(4).

<http://www.gpo.gov/fdsys/pkg/CFR-2011-title49-vol2/pdf/CFR-2011-title49-vol2-sec173-6.pdf>

NOTE: Per these regulations anyone who handles, offers for transport, or transports specimens must be trained to do so.

General Packaging Requirements

- Packaging must coincide with 29 CFR 1910.1030 and specimens should be packed in a basic triple packaging system with a primary watertight container wrapped with absorbent material, secondary watertight container and an outer shipping package.
- Enclose an itemized list of contents between the secondary packaging and the outer packaging.
- Package on cold packs.

Inner Packaging Requirements

- Primary receptacle(s) must be watertight. An example of a watertight primary receptacle is a tube sealed with parafilm (flexible plastic covering).
- Secondary receptacle must be watertight. An example of a watertight secondary receptacle is a zip closure bag. If using a zip closure bag, place only one specimen per bag. A common inner packaging is one non-watertight tube placed in a zip closure bag (the primary watertight receptacle). Multiple zip closure bags are then placed in one large zip closure bag (the secondary watertight receptacle).
- An itemized list of the contents enclosed between the secondary receptacle and the outer packaging.
- Absorbent material must be placed between the primary receptacle(s) and secondary receptacle and be of sufficient quantity to absorb the entire contents of the primary receptacle(s).

Outer Packaging Requirements

- Package must be rigid, with strong packaging, to secure against shifting.

Laboratory Requisition

- Complete DOH Form 1847 for each specimen and mark the appropriate test under the VIROLOGY section: Measles PCR (#1755), measles IgM (#1750), measles IgG (#1740). In the “Comment/Additional Information” section in the lower right-hand corner of the form add any pertinent patient information such as vaccination status, symptoms, and onset dates of fever and rash. Please do not use electronic ordering for measles testing requests.

Ship Specimens To: the appropriate BPHL location, addresses are located on page 2. Deliver or ship specimens immediately, at least by next day mid-morning delivery.

Notification: On shipment of a specimen for a suspect measles patient to BPHL, please notify Valerie Mock with the BPHL-Jacksonville (see below for contact information) or Edgar Kopp with the BPHL-Tampa (see below for contact information)

Provide the shipping tracking number if being shipped commercially.

For Additional Information:

On Submitting Specimens for Measles Testing: Contact your local County Health Department.

Contacts for Laboratory Questions:

Jacksonville

Valerie Mock, Bureau of Public Health Laboratories at 904-791-1539 or 904-637-9284

Tampa

Edgar Kopp, Bureau of Public Health Laboratories at 813-233-2260 or 813-285-1491

For more information on DOT shipping regulations:

https://hazmatonline.phmsa.dot.gov/services/publication_documents/Transporting%20Infectious%20Substances%20Safely.pdf