# ECPHL ERIE COUNTY PUBLIC HEALTH LABORATORIES

# SPECIMEN COLLECTION and TRANSPORT MANUAL

ECPHL ERIE COUNTY PUBLIC HEALTH LABORATORIES
503 KENSINGTON AVENUE
BUFFALO, NY 14214
TEL: (716) 898-6100
FAX: (716) 898-6110

*ECPHL* effective 3/1/2012, rev. 11/14, 9/14, 3/17, 9/19, 10/20

# Specimen Collection and Transport Manual

**Revised:** **September 2019**

**By:** **Shirley Keenan**

**Accepted:** **October 2019**

**By:** **Scott LaPoint, MD** _____
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| **Date** | **Reviewed/Revised** | **By** |
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## Revision Record

| Rev. # | Date: | Responsible person | Description of Change |
|---|---|---|---|
| 1.1 | 1/2014 | S. Keenan | Update Department Contacts |
| 1.2 | 9/2014 | S. Keenan | Review and update manual |
| 1.3 | 3/2017 | S. Keenan | Update to website, updates to chemistry and NAAT testing, added Trioplex; update for new environmental testing |
| 1.4 | 9/2019 | S. Keenan | Updates to content |
| 1.5 | 10/2020 | S. Keenan | Added SARS-CoV-2 Rapid/PCR/Ab |
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Laboratory Staff Verification

**The following laboratory staff verifies by their signature that they have read and understand the procedures and policies set forth in this document:**

| NAME | SIGNATURE | DATE | VERSION |
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## 1. INTRODUCTION

Erie County Public Health Laboratories (ECPHL) provides a wide range of clinical and environmental laboratory services. Our goal is to provide each client organization with quality services and programs as reflected in our mission statement.

The Specimen Collection and Transport Manual (SCTM) details various laboratory services, contact information and many of the required elements for specimen submission. Accurate and timely laboratory results are only possible when the sample collection and submission is optimal. To that end this manual was designed to provide much of the information needed to optimize the collection submission of specimens for testing.

We appreciate your selection of ECPHL as a provider of quality, public health diagnostic and environmental services. Our staff is available for inquiries and consultation on your testing needs and may be reached by calling the main lab at 716-898-6100.

# Erie County Public Health Laboratories' Mission:

To provide proficient, cost-effective laboratory services, educational programs, method evaluations, epidemiological support and scientific study resources to the health care, laboratory, environmental sciences, government, and private communities of Western New York

## 2. ACCREDITATION

- **CLIA'88** 33D0654777 - Buffalo, NY
- **Federal I.D. Number** 16-6002558
- **New York State Department of Health (NYSDOH)**

  Clinical Laboratory Evaluation Program (CLEP) PFI: 1980 CODE#: 1401A100

  Environmental Laboratory Approval Program (ELAP) #: 10472

**Professional Affiliations**

- APHL - Association of Public Health Laboratories
- ASM - American Society for Microbiology
- CLSI - Clinical and Laboratory Standards Institute

**Quality Control/Proficiency Testing Programs**

- NYSDOH - New York State Department of Health
- CDC - Centers for Disease Control and Prevention
- WSLH - Wisconsin State Laboratory of Hygiene
- AAFP - American Academy of Family Physicians

## 3. LOCATION

**ECPHL ERIE COUNTY**
**PUBLIC HEALTH LABORATORIES**

**503 Kensington Avenue**
**Buffalo, New York 14214**
**Tel: (716) 898-6100**
**Fax: (716) 898-6110**

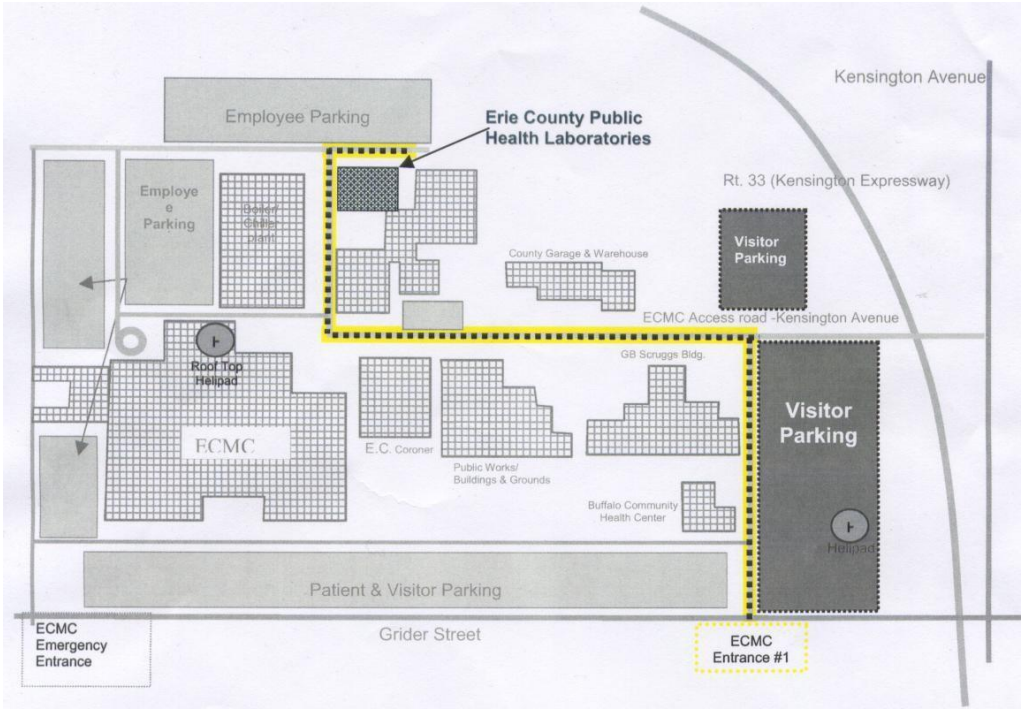
**Hours of Operation**
**Monday – Friday 8:30am to 4:30pm**

**In the event of an emergency, call (716) 961-7898**
**(MERS-Medical Emergency Radio System)**

**Directions from NYS Thruway (I-90):**

- Traveling on the NYS Thruway, use exit 51W/Route 33W (Kensington Expressway) to downtown Buffalo.
- Proceed on Route 33W to Grider Street exit.
- Exit Route 33W and proceed through one (1) stop sign to Grider Street.
- Turn left on Grider Street and proceed through one (1) traffic signal to the Erie County Medical Center campus.
- Enter ECMC campus by turning right into the first entrance on Grider Street.
- Use the map below and follow signage to the Erie County Public Health Laboratories. Public entrance is door # 8.

**Please be advised that visitors to the Erie County Public Health Laboratories will be required to register in the laboratory administrative office upon arrival and obtain a visitor's identification card.**



## 4. DEPARTMENT CONTACTS

| Department | Phone | Room | Email Address |
|---|---|---|---|
| **Administration** | 716 898-6100 | AA19 | |
| Division Director | | | |
| Carleen Pope, MS, MPH | 716 961-7588 | AA15 | carleen.pope@erie.gov |
| Director | | | |
| Scott LaPoint, MD | 585 750-6574 | AA26 | scottlapoint@gmail.com |
| Assistant Director | | | |
| Keith Krabill, MD | 716 626-7942 | AA26 | kkrabill@kaleidahealth.org |
| Executive Assistant (Laboratory) | | | |
| Michael Simkins | 716 898-6102 | AA18 | michael.simkins@erie.gov |
| Administrative Assistant (PHL) (LIMS Manager) | | | |
| Joanne Kojm | 716 961-7522 | AA19 | joanne.kojm@erie.gov |
| **Central Receiving/ Specimen Processing** | 716 898-6111 | AA5 | |
| Executive Assistant (Laboratory) | | | |
| Michael Simkins | 716 898-6102 | AA18 | michael.simkins@erie.gov |
| **Clinical Public Health Lab** | 716 898-6116 | AA11 | |
| Chief Microbiologist (PH) | | | |
| Shirley Keenan | 716 898-6117 | AA14 | shirley.keenan@erie.gov |
| Chief Laboratory Technologist (PH) | | | |
| Colleen Palisano | 716 898-6117 | AA13 | colleen.palisano@erie.gov |
| **Emerging Infections and Biodefense** | | | |
| Carleen Pope | 716 961-7588 | AA15 | carleen.pope@erie.gov |
| **Environmental Health Lab** | 716 961-7520 | AA21 | |
| Senior Sanitary Chemist | | | |
| Gerhard Paluca | 716 898-6118 | AA23 | gerhard.paluca@erie.gov |
| Sanitary Chemist | | | |
| Bryan Hill | 716 961-7578 | BB123 | bryan.hill@erie.gov |

## 5. GUIDELINES FOR SPECIMEN/SAMPLE COLLECTION AND HANDLING

The following general guidance is applicable to both clinical specimen and environmental sample collection. The following fundamentals should be considered when sending samples for laboratory analysis:

1. The sampled material must be truly representative of the site of interest. For clinical material it is the site of optimal recovery; for environmental material it is a homogenous sample.
2. Sufficient quantity of sample must be obtained.
3. The appropriate collection devices and sample containers must be used. Many contain preservatives or additives that ensure optimal holding and recovery of the analyte of interest.
4. Storage and transport conditions must be followed for optimal analysis.

The laboratory strongly encourages communication from the sender before the sample is received in the laboratory especially for new or "non-routine" requests. This ensures guidance for proper specimen collection is up-to-date and correct. In an effort to provide accurate and timely results the laboratory reserves the right to reject specimens not properly collected, contained, or transported.

### Collection Materials

Specimen containers and supplies are provided by the laboratory according to the table below. Materials not listed below are deemed containers that may be supplied by clinics or commonly submitted by clients and should be approved by the laboratory prior to submittal. Requests for collection materials can be made in person at the laboratory receiving area or by phone to **ECPHL Central Receiving at 716 898-6111.**

| **Clinical PH Testing** | **Environmental Sampling** | |
|---|---|---|
| Clinical lab requisition | Environmental lab requisition | |
| Enteric transport cups | Alkalinity bottle | |
| JEMBEC culture plates | Beach (Beach testing) | 500mL PP Bottle |
| NAAT swabs, male/female | BOD, Residue | 1 Quart Bottle |
| NAAT urines, male/female | Coliform testing | Colilert Bottles - Sterile, with sodium thiosulfate |
| SST venipuncture tubes* | | |
| Specimen transport bags* | Colilert Bottles | |
| Viral transport tubes | Cyanide | Sodium hydroxide at pH=12 |
| | Fluoride | No preservative |
| | Nitrate | |
| | Haloacetic acid | 250mL amber bottle with ammonium chloride |
| | Inorganics | No preservative - Chloride, Color, Residue, o-Phosphate |
| | Metals | Nitric acid at pH less than 2.0 Calcium/Total Hardness |
| | Nitrate, chlorinated | |
| | Nitrate, non-chlorinated | |
| | Swimming pools | |
| | Volatile Organic Compound (VOC) | 2 x 40mL amber vials and a dropper bottle with HCl |
| | THM | 2 x 40mL amber vials; Does not require HCl |
| | Endotoxins (LAL) | Sterile vial |
| | Microcystins | 125mL amber container with sodium thiosulfate |

* for designated providers

**Acceptance/Rejection Criteria**
The laboratory will examine and analyze only those samples/specimens for which it holds a NYS Permit for Testing or Certificate of Approval. In addition, the laboratory will only accept specimens at the request of persons authorized by law to use the findings of the laboratory examination in their practice or performance of their official duties.

Rejection criteria depend on several factors: the sample/specimen received, the test ordered and the laboratory policy. Determining the acceptable condition of a specimen is often a judgment call based as much on good laboratory practice as on objective assessment of the sample. In addition to the specific criteria listed below, a specimen should NOT be tested if:

- The apparent condition of the specimen indicates that it is unsatisfactory for testing of it is inappropriate for The test requested.
- It has been collected, labeled, preserved or otherwise handled in such a manner that it is unreliable for testing.
- It is perishable, that is, the time has lapsed between collection and receipt rendering the sample unreliable.
- The date or time of collection is not furnished to the lab for those tests that require it.

***When a specimen is deemed unacceptable for testing the laboratory will promptly notify the sender and give the reason for rejection.***

Rejection criteria applicable to all submissions include:

1. Requests for non-permitted laboratory tests.
2. Unlabeled, mislabeled, mismatched identification on container or requisition.
3. Incomplete information on requisition.
4. No sample/specimen received.
5. Improper, leaking or compromised sample container.
6. Quantity insufficient for testing.
7. Specimen receipt that exceeds the allowable time limit for testing.
8. Laboratory accident preventing analysis.

Additional rejection criteria related to specific tests and sources are listed in each laboratory section.

**Laboratory Requisition and Specimen Labeling**
All requests for testing are written, not verbal. Both Clinical and Environmental laboratory requisitions serve as the written request and provide necessary information and identification for testing. Incomplete requisitions may require follow-up phone calls and can delay the start of testing.

Requisitions can be printed from the laboratory website:

**http://www2.erie.gov/health/index.php?q=node/94**

Clinical specimen labeling includes the following and MUST match the completed lab requisition:

- Last name, First*
- Date of birth
- Date of collection

*Submitter will assign a unique identifier in place of first and last name in the event a specimen is submitted for anonymous testing (ex: HIV test request following occupational exposure).

Environmental sample requisition must include:

- Complete sampling address
- Submitter name and address
- Complete sample description - see requisition

**Packaging and Transport**

Appropriate packaging and transportation of specimens is designed to follow all applicable federal and state regulations and to provide for the safety of all who come in contact with the samples.

**Test Referral**

Tests that are listed on the clinical and environmental requisitions are performed on-site. On occasion, it may be necessary for a sample or specimen to be referred to another laboratory for supplemental or confirmatory testing. The following guidelines are in effect:

1. Samples /specimens will either be returned to the submitter, if it is determined that the request was sent by mistake, or referred to NYS accredited laboratories to perform the additional work.
2. Tests that are currently referred will be listed in the SCTM.
3. The laboratory report will contain the name of the testing lab and its NYS identification number as well as the test result. Referral lab contact information will be available on request for any inquiries.

The referral laboratories currently in use include:

**Erie County Medical Center**
**Laboratory Medicine**
**462 Grider Street**
**Buffalo, NY 14215**
**PFI# 2009**

**Referrals:**

- AFB smear
- TB culture
- TB susceptibility

**Wadsworth Laboratories**
**David Axelrod Institute**
**120 New Scotland Avenue**
**Albany, NY 12208**
**PFI# 8523**

**Referrals:**

- Bacterial Isolates for confirmation
- HIV-1 RNA Assay
- Influenza variants

**Turn Around Time**

Laboratory turnaround time (TAT) is the time from receipt of the specimen until testing results are available. The laboratory monitors this as a quality assurance measure to providers and clients. It is recognition of the necessity for timely reporting.

# Clinical Public Health Testing

## General Elements

Clinical laboratory tests are conducted on specimens from a human source for the diagnosis or surveillance of human illness. These laboratory tests are regulated by NYSDOH CLEP which has deemed approved status for federal CLIA regulations. In addition, clinical laboratory testing must be performed by NYS licensed clinical laboratory technologists.

## Specimen Collection by Body Site

The following procedures are designed as guidelines for collection of human specimens for Erie County Public Health Laboratory analysis. Most collection procedures are considered invasive. As such, the procedures should always be performed by trained, experienced medical personnel. Individual collection methods may vary according to training but the following procedures highlight the basic steps to follow when collecting human specimens.

In addition, ***standard precautions*** must be followed for the safety of patient and healthcare personnel. "Standard precautions" refers to a set of practices used to prevent the transmission of infectious diseases. It applies to specimens from all individuals whether or not they appear infectious or symptomatic. Personal protective equipment (PPE) should be worn according to the policy and procedures of the facility. Depending on the risk assessment and the specimen being collected PPE should include:

- disposable exam gloves
- protective clothing: fluid resistant lab coat/smock
- eyewear, safety glasses
- respiratory barriers, face masks

Laboratory analysis greatly depends on a properly collected, stored, and transported specimen. In general, the sooner a specimen arrives in the testing laboratory the quicker the results and the more accurate the analysis will be. However, appropriate storage and transport can be maintained when immediate delivery is unavailable. The following instructions are guidelines and may represent the optimum conditions. If there is an expectation that optimum collection, storage, or transport conditions cannot be met, contact the laboratory for further instructions. The prime objective is a properly maintained specimen for laboratory analysis.

## Anogenital Skin Lesion

| | |
|---|---|
| **Intended Use** | Nucleic Acid Amplification Test for Herpes Simplex Viruses 1 & 2 |
| **Container** | Aptima Multitest Swab Specimen Collection Kit |
| **Method** | |
| **Labeling** | Patient's last, first name; date of birth; date and time of collection |
| **Storage** | Store and transport the swab in the swab specimen transport tube at 2°C to 30°C |
| **Transport** | Within 1 to 3 days |
| **Comments** | Performed by trained medical personnel |
| **Materials** | Aptima Multitest Swab Specimen Collection Kit |

### Procedure

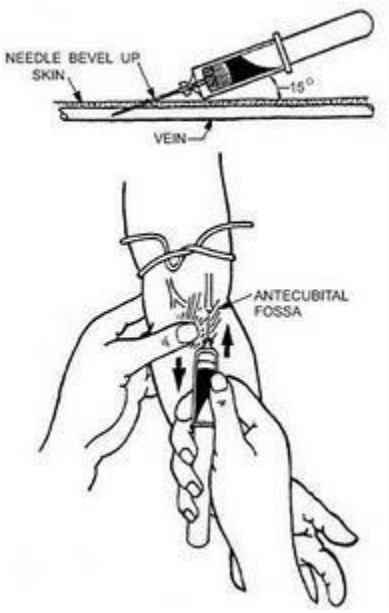
1. Partially open the swab package and remove the swab. Do not touch the soft tip or lay the swab down. **If the soft tip is touched, laid down, or dropped, discard and get a new Aptima Multitest Swab Specimen Collection Kit.**
2. Hold the swab, placing thumb and forefinger in the middle of the shaft covering the black score line.
3. Vigorously swab the base of the lesion to absorb fluid, being careful not to draw blood. If needed, expose the base of the lesion to access fluid.
4. Withdraw the swab without touching any other site outside the lesion.
5. While holding the swab in hand, unscrew the tube cap. Do not spill the tube contents. **If the tube contents are spilled, discard and replace with a new Aptima Multitest Swab Specimen Collection Kit.**
6. Immediately place the swab into the transport tube so the black score line is at the top of the tube. Align the score line with the top edge of the tube and carefully break the shaft. The swab will drop to the bottom of the vial. Discard top portion of the shaft.
7. Re-cap swab specimen transport tube tightly. Label and store between 2°C to 30°C until transported for testing.

## Blood - Whole blood by venipuncture, including requests for plasma and serum

| | |
|---|---|
| **Intended Use** | Clinical chemistry: Alkaline Phosphatase, Alanine transaminase, Aspartate transaminase, Total Bilirubin, Total Cholesterol, HDL-Cholesterol<br>Hepatitis, HIV Ag/Ab, Syphilis, RPR, TPPA, Zika/Chikungunya/Dengue Trioplex, SARS-CoV-2 Ab |
| **Container** | Vacutainer: SST-marble top (preferred), red-top (acceptable) |
| **Method** | Venipuncture, phlebotomy |
| **Labeling** | Patient's last, first name; date of birth; date and time of collection |
| **Storage** | At room temp < 8 hours; refrigerated 1 to 2 days |
| **Transport** | ASAP or within 1 to 3 days |
| **Comments** | Performed by trained medical personnel |
| **Materials** | Safety needles, tourniquet<br>Antiseptic, 70% isopropyl alcohol wipes<br>Sharps disposal container<br>Gauze or cotton balls<br>Bandages or tape for patient |

### Procedure

1. Identify the patient with name and date of birth.
2. Assemble all materials, including labels and requisition.
3. Select the site for venipuncture. Position the seated patient with arm extended from shoulder or slightly bent on a table surface. Use the cephalic or median cubital veins.
4. Apply the tourniquet about three inches above the selected site. Instruct patient to make a fist so vein dilates. Vein should spring back when tapped.
5. Sterilize the site with alcohol, wiping in a circular motion from the center of site to the outside.
6. With bevel of needle up, insert the needle swiftly through the skin into the selected vein at a 15 to 30 degree angle. Once into the vein, push vacutainer tubes onto the needle and fill each tube completely.
7. While drawing last tube, remove tourniquet. Finish drawing last tube, withdraw needle and place gauze or cotton ball over needle site. Apply pressure once needle has been removed. Maintain pressure until bleeding has stopped and apply bandage to patient.
8. LABEL all tubes with patient's first and last name, DOB, and date of collection.
9. Transport or store appropriately.



## Cervical, Endocervical

| | |
|---|---|
| **Intended Use** | Nucleic Acid Amplification Test (CT/GC/TV/M. gen NAAT), GC Culture |
| **Container** | Aptima Unisex Swab Specimen Collection Kit, JEMBEC |
| **Method** | Internal Exam |
| **Labeling** | Patient's last, first name; date of birth; date and time of collection |
| **Storage** | Store and transport the swab in the swab specimen transport tube at 2°C to 30°C; JEMBEC incubated 34°C to 36°C |
| **Transport** | Within 1 to 3 days |
| **Comments** | Performed by trained medical personnel |
| **Materials** | Speculum<br>Sterile swab*: Dacron, rayon, or cotton with plastic or aluminum shaft<br>Aptima Unisex Swab Specimen Collection Kit<br>JEMBEC plate system<br>*NOTE: Due to the nature of the testing methodology, separate swabs *must* be utilized for NAAT testing, GC culture |

## Procedure

1. Prepare female patient for an internal pelvic exam.
2. Moisten the speculum with warm water; lubricants are toxic to Neisseria sp.
3. For NAAT:
   a. Remove excess mucous from the cervical os and surrounding mucosa with a cleaning swab (white shaft with red printing). Discard this swab.
   b. Insert collection swab (blue shaft swab with green printing) into the endocervical canal. Rotate swab for 10 to 30 sec.; avoid contact with the vaginal mucosa.
   c. While holding swab in hand, unscrew the tube cap. Do not spill the contents. If spilled, **discard and replace with a new Aptima unisex swab transport tube.**
   d. Immediately place swab into transport tube. Align the score line with the top edge of the tube and carefully break swab shaft. Swab will drop to the bottom of the vial. Discard top portion of the swab shaft.
   e. Re-cap swab specimen transport tube tightly. Label and store between 2°C to 30°C until transported for testing.
4. For GC culture:
   a. Insert separate collection swab into the cervical canal and rotate for 10 to 30 sec.
   b. Gently roll swab onto the surface of a JEMBEC plate. Place the tablet (sodium bicarbonate/citric acid) into the well.
   c. Label the plate and place it into the zipper lock bag and incubate at 34°C to 36°C until transported for testing.

## Feces/Stool

| | |
|---|---|
| **Intended Use** | Enteric culture |
| **Container** | Stool collection kit - ECPHL provided |
| **Method** | |
| **Labeling** | Patient's last, first name; date of birth; date and time of collection |
| **Storage** | Refrigerate after collection |
| **Transport** | Within 3 days of collection |
| **Comments** | Patient can self-collect |
| **Materials** | Sterile cup with transport media<br>Disposable spatula<br>Patient ID label and instructions<br>Plastic wrap or plastic-coated disposable plate |

## Procedure

1. Instruct patients who can, to excrete directly into the cup. Do not take specimen from the water in the toilet or allow urine to contaminate the specimen.
2. Alternately, loosely attach plastic wrap to the sides of the toilet between the patient and the water in the bowl or float a disposable plastic-coated (Styrofoam) plate in the toilet bowl.
3. After defecation, use the disposable spatula to place approximately 10 to 20 grams of the specimen into the transport cup. Specimen volume should be the size of a small egg.
4. Cap specimen tightly, label and transport to the laboratory immediately or refrigerate and deliver within three days of collection.

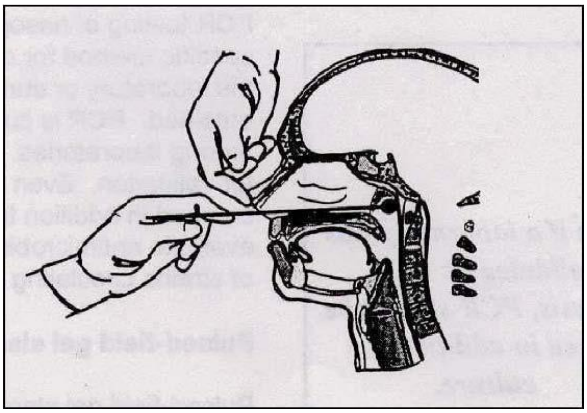
## Nasopharyngeal

| | |
|---|---|
| **Intended Use** | Influenza A & B; Bordetella, SARS-CoV-2, SARS-CoV-2 (Waived/Rapid)* |
| **Container** | Viral Transport media (VTM), Swab (Rapid) |
| **Method** | |
| **Labeling** | Patient's last, first name; date of birth; date and time of collection |
| **Storage** | Freeze (-20°C) after collection |
| **Transport** | Within 7 days |
| **Comments** | Performed by trained medical personnel |
| **Materials** | Sterile Dacron or rayon swab with plastic or aluminum shaft<br>Viral transport media in screw-cap tubes |

## Procedure

1. Remove the excess mucous by having the patient gently blow his/her nose.
2. With patient's head against a wall or firm surface, insert the swab into one nostril and proceed straight back until it reaches the nasopharynx. The length from the nose to the ear gives an estimate of the distance the swab will travel. Do not force. If there is an obstruction try the other nostril.
3. Rotate the swab gently for 5 to 10 seconds to loosen epithelial cells.
4. Remove the swab and place in VTM. Break or bend the swab to fit into the tube. Cap tightly and label with patient identity.
5. Store frozen until transport.

* Consult with laboratory prior to collection for waived/rapid SARS-CoV-2



## Rectal

| | |
|---|---|
| **Intended Use** | Nucleic Acid Amplification Test (CT/GC NAAT), GC culture |
| **Container** | Aptima Multitest Swab Specimen Collection Kit; JEMBEC |
| **Method** | |
| **Labeling** | Patient's last, first name; date of birth; date and time of collection |
| **Storage** | Store and transport the swab in the swab specimen transport tube at 2°C to 30°C; JEMBEC incubated 34°C to 36°C |
| **Transport** | Within 1 to 3 days |
| **Comments** | Performed by trained medical personnel |
| **Materials** | Aptima Multitest Swab Collection Kit<br>Sterile swab*: Dacron, rayon, or cotton with plastic or aluminum shaft<br>JEMBEC plate system<br>*NOTE: Due to the nature of the testing methodology, separate swabs *must* be utilized for NAAT testing, GC culture |

### Procedure

1. Prepare the patient for collection procedure.
2. For NAAT:
   a. Partially open the swab package and remove the swab. Do not touch the soft tip or lay the swab down. **If the soft tip is touched, laid down, or dropped, discard and use a new Aptima Multitest Swab Specimen Collection Kit.**
   b. Hold the swab, placing thumb and forefinger in the middle of the shaft covering the black score line.
   c. Carefully insert the swab into the rectum about 1 to 2 inches (3 to 5 cm) past the anal margin (the outside of the anus) and gently rotate the swab for 5 to 10 seconds. Withdraw the swab without touching the skin.
   d. While holding the swab in hand, unscrew the tube cap. Do not spill the tube contents. **If the tube contents are spilled, discard and replace with a new Aptima Multitest Swab Specimen Collection Kit.**
   e. Immediately place the swab into the transport tube so the black score line is at the top of the tube. Align the score line with the top edge of the tube and carefully break the shaft. The swab will drop to the bottom of the tube. Discard the top portion of the swab shaft.
   f. Re-cap swab specimen transport tube tightly. Label and store between 2°C to 30°C until transported for testing.
3. For GC culture:
   a. Insert separate collection swab 1 to 2 cm beyond the anal sphincter; rotate it swabbing the anal crypts. Remove swab, avoiding fecal contamination as much as possible.
   b. Inoculate the JEMBEC plate by rolling the rectal swab onto the media. Place the tablet (bicarbonate/ citric acid) into the well.
   c. Label the plate and place it into the zipper lock bag and incubate at 34°C to 36°C until transported for testing.

## Throat

| | |
|---|---|
| **Intended Use** | Nucleic Acid Amplification Test (CT/GC NAAT), GC culture |
| **Container** | Aptima Multitest Swab Specimen Collection Kit; JEMBEC |
| **Method** | |
| **Labeling** | Patient's last, first name; date of birth; date and time of collection |
| **Storage** | Store and transport the swab in the swab specimen transport tube at 2°C to 30°C; JEMBEC incubated 34°C to 36°C |
| **Transport** | Within 1 to 3 days |
| **Comments** | Performed by trained medical personnel |
| **Materials** | Aptima Multitest Swab Collection Kit<br>Sterile swab*: Dacron, rayon, or cotton with plastic or aluminum shaft<br>Tongue depressor<br>JEMBEC plate system<br>*NOTE: Due to the nature of the testing methodology, separate swabs *must* be utilized for NAAT testing, GC culture |

## Procedure

1. Prepare the patient for collection procedure.
2. For NAAT:
   a. Partially open the swab package and remove the swab. Do not touch the soft tip or lay the swab down. **If the soft tip is touched, laid down, or dropped, discard and use a new Aptima Multitest Swab Specimen Collection Kit.**
   b. Hold the swab, placing thumb and forefinger in the middle of the shaft covering the black score line.
   c. Carefully insert the swab into the throat ensuring contact with bilateral tonsils (if present) and the posterior pharyngeal wall. Withdraw the swab without touching the inside of the cheeks or tongue.
   d. While holding the swab in hand, unscrew the tube cap. Do not spill the tube contents. **If the tube contents are spilled, discard and replace with a new Aptima Multitest Swab Specimen Collection Kit.**
   e. Immediately place the swab into the transport tube so the black score line is at the top of the tube. Align the score line with the top edge of the tube and carefully break the shaft. The swab will drop to the bottom of the tube. Discard the top portion of the swab shaft.
   f. Re-cap swab specimen transport tube tightly. Label and store between 2°C to 30°C until transported for testing.
3. For GC culture:
   a. Use the tongue depressor to hold tongue down and locate areas of inflammation or exudate.
   b. Firmly rub the swab over posterior pharynx.
   c. Withdraw the swab, avoiding any contact with cheek, teeth, gums, or tongue.
   d. Gently roll swab onto the surface of a JEMBEC plate. Place the tablet (sodium bicarbonate/citric acid) into the well.
   e. Label the plate and place it into the zipper lock bag and incubate at 34°C to 36°C until transported for testing.

## Urethral

| | |
|---|---|
| **Intended Use** | Nucleic Acid Amplification Test (CT/GC/M. gen NAAT), GC Culture |
| **Container** | Aptima Unisex Swab Specimen Collection Kit, JEMBEC |
| **Method** | Internal Exam |
| **Labeling** | Patient's last, first name; date of birth; date and time of collection |
| **Storage** | Store and transport the swab in the swab specimen transport tube at 2°C to 30°C; JEMBEC incubated 34°C to 36°C |
| **Transport** | Within 1 to 3 days |
| **Comments** | Performed by trained medical personnel |
| **Materials** | Sterile swab*: Dacron, rayon, or cotton with plastic or aluminum shaft<br>Aptima Unisex Swab Specimen Collection Kit<br>JEMBEC plate system<br>*NOTE: Due to the nature of the testing methodology, separate swabs *must* be utilized for NAAT testing, GC culture |

### Procedure

***NOTE:*** Patient should not have urinated at least one hour prior to specimen collection.

1. Prepare the patient for collection procedure.
2. For NAAT:
   a. Discard cleaning swab (white shaft with red printing); it is NOT needed for male NAAT specimen collection.
   b. Insert collection swab (blue shaft swab with green printing) 2 cm to 4 cm into urethra. Gently rotate swab clockwise for 2 to 3 seconds in urethra to help ensure adequate sampling. Withdraw swab carefully.
   c. While holding swab in hand, unscrew the tube cap. Do not spill the contents. If spilled, **discard and replace with a new Aptima unisex swab transport tube.**
   d. Immediately place swab into transport tube. Align the score line with the top edge of the tube and carefully break swab shaft. Swab will drop to the bottom of the vial. Discard top portion of the swab shaft.
   e. Re-cap swab specimen transport tube tightly. Label and store between 2°C to 30°C until transported for testing.
3. For GC culture:
   a. Strip the urethra toward the orifice to express the exudate and collect on a swab.
   b. Alternatively, insert a thin calcium alginate swab into the urethra 1 to 2 cm; gently rotate.
   c. Gently roll swab onto the surface of a JEMBEC plate. Place the tablet (sodium bicarbonate/citric acid) into the well.
   c. Label the plate and place it into the zipper lock bag and incubate at 34°C to 36°C until transported for testing.

## Urine

| | |
|---|---|
| **Intended Use** | Nucleic Acid Amplification Test (male/female CT/GC/M. gen NAAT) |
| **Container** | Sterile cup with screw-cap |
| **Method** | First void |
| **Labeling** | Patient's last, first name; date of birth; date and time of collection |
| **Storage** | Store and transport the urine specimen transport tube at 2°C to 30°C |
| **Transport** | Within 1 to 3 days |
| **Comments** | Performed by trained medical personnel |
| **Materials** | Sterile urine collection cup<br>Aptima Urine Specimen Collection Kit |

## Procedure

***NOTE:*** Patient should not have urinated at least one hour prior to specimen collection.

1. Instruct patient to provide approximately 20 to 30 mL of **first-catch** urine into urine collection cup free of any preservatives.
2. Remove cap from urine specimen transport tube and transfer 2 mL of urine into urine specimen transport tube using the disposable pipette provided. Fluid level must be **between the black fill lines** on the urine specimen transport tube label.
3. Re-cap urine specimen transport tube tightly. Label and store between 2°C to 30°C until transported for testing.

## Vaginal

| | |
|---|---|
| **Intended Use** | Nucleic Acid Amplification Test (CT/GC/TV/M. gen NAAT), GC Culture |
| **Container** | Aptima Multitest Swab Specimen Collection Kit, JEMBEC |
| **Method** | Internal Exam |
| **Labeling** | Patient's last, first name; date of birth; date and time of collection |
| **Storage** | Store and transport the swab in the swab specimen transport tube at 2°C to 30°C; JEMBEC incubated 34°C to 36°C |
| **Transport** | Within 1 to 3 days |
| **Comments** | Performed by trained medical personnel |
| **Materials** | Speculum<br>Sterile swab*: Dacron, rayon, or cotton with plastic or aluminum shaft<br>Aptima Multitest Swab Specimen Collection Kit<br>JEMBEC plate system<br>*NOTE: Due to the nature of the testing methodology, separate swabs *must* be utilized for NAAT testing, GC culture |

## Procedure

1. Prepare female patient for an internal pelvic exam.
2. Moisten the speculum with warm water; lubricants are toxic to Neisseria sp.
3. For NAAT:
   a. Remove swab from package. **If the soft tip is touched, laid down, or dropped, discard and get a new Aptima Multitest Swab Specimen Collection Kit.**
   b. Hold swab, placing thumb and forefinger in the middle of the swab shaft. Do not hold the swab shaft below the score line.
   c. Carefully insert the swab into the vagina about 2 inches (5 cm) past the introitus and gently rotate the swab for 10 to 30 seconds. Withdraw without touching the skin.
   d. While holding the swab in hand, unscrew the tube cap. Do not spill the contents. If spilled, **discard and replace with a new Aptima Multitest Swab Specimen Collection Kit.**
   e. Immediately place swab into transport tube. Align the score line with the top edge of the tube and carefully break swab shaft. Swab will drop to the bottom of the vial. Discard top portion of the swab shaft.
   f. Re-cap swab specimen transport tube tightly. Label and store between 2°C to 30°C until transported for testing.
4. For GC culture:
   a. Insert separate collection swab into the vaginal canal and rotate for 10 to 30 sec.
   b. Gently roll swab onto the surface of a JEMBEC plate. Place the tablet (sodium bicarbonate/citric acid) into the well.
   c. Label the plate and place it into the zipper lock bag and incubate at 34°C to 36°C until transported for testing.

# Clinical Testing Chart

**KEY**

- SST/gold: Serum separator tube, gold top
- Venipuncture: whole blood, serum or plasma
- CB: Cary-Blair
- JEMBEC: John E. Martin Biological Environmental Chamber
- VTM: Viral Transport Media
- SA: Select Agent

***Note: Multiple tests using serum can be performed on one full SST.***

| Code | Test Name | Method | Source | Container/Qty<br>Provided by LAB | Storage | Transport | TAT (days) | Rejection Criteria<br>In addition to pg. 11 |
|---|---|---|---|---|---|---|---|---|
| **BACTERIOLOGY** | | | | | | | | |
| | Bacterial isolate, Rule-out<br>**Prior Notification needed** | LRN/PCR<br>SA Rule-out | Isolate | Culture tube-<br>5 mL slant | Room temp | 24 hrs | 3 days | Uninoculated |
| | Culture, Enteric | Culture | Feces, Stool | CB transport<br>10-20 grams | Refrigerate | 1-3 days | 7 days | Greater than 72 hrs after collection |
| GC | Culture, *N. gonorrhoeae* | Culture | Cervical, Vaginal, Urethral, Rectal, Throat | JEMBEC | Incubate<br>34°C-36°C | 1-3 days | 7 days | Expired, frozen, or dehydrated media; no $CO_2$ pellet; refrigerated |
| **CLINICAL CHEMISTRY** | | | | | | | | Hemolyzed or lipemic |
| ALP | Alkaline Phosphatase | Enzymatic | Serum | SST | Refrigerate | 24 hrs | 3 days | |
| ALT | Alanine transaminase | Enzymatic | Serum | SST | Refrigerate | 24 hrs | 3 days | |
| AST | Aspartate transaminase | Enzymatic | Serum | SST | Refrigerate | 24 hrs | 3 days | |
| TBili | Bilirubin, Total | Colorimetric | Serum | SST | Refrigerate | 24 hrs | 3 days | |
| CHOL, TOTAL | Cholesterol, Total | Enzymatic | Serum | SST | Refrigerate | 24 hrs | 3 days | |
| HDL | HDL-Cholesterol | Enzymatic | Serum | SST | Refrigerate | 24 hrs | 3 days | |
| **DIAGNOSTIC IMMUNOLOGY** | | | | | | | | Receipt 7 days after collection |
| HBsAb | Hepatitis B surface antibody | CMIA | Serum | SST | Refrigerate | 1-3 days | 3 days | |
| HBsAg | Hepatitis B surface antigen | CMIA | Serum | SST | Refrigerate | 1-3 days | 3 days | |
| HCV | Hepatitis C antibody | CMIA | Serum | SST | Refrigerate | 1-3 days | 3 days | |
| HIV | HIV Ag/Ab Combo | CMIA | Serum | SST | Refrigerate | 1-3 days | 3 days | |
| SYPH | Syphilis | CMIA/RPR/TPPA | Serum | SST | Refrigerate | 1-3 days | 3 days | |

| Code | Test Name | Method | Source | Container/Qty<br>Provided by LAB | Storage | Transport | TAT (days) | Rejection Criteria<br>In addition to pg. 11 |
|---|---|---|---|---|---|---|---|---|
| **MOLECULAR MICROBIOLOGY** | | | | | | | | |
| FLU | Influenza AB (A & B subtyping) | PCR | Nasopharyngeal<br>Nasal swab | VTM, 2mL | Freeze | 1-3 days | 7 days | |
| BORD | Bordetella | PCR | Nasopharyngeal<br>Nasal swab | VTM, 2mL | Freeze | 1-3 days | 7 days | |
| SARS-CoV-2 | SARS-CoV-2 | PCR | Nasopharyngeal<br>Nasal swab | VTM, 2mL | Freeze | 1-3 days | 7 days | |
| SARS-CoV-2 | SARS-CoV-2 | ID NOW Waived/Rapid PCR | Nasopharyngeal<br>Nasal swab | Swab | N/A | N/A | 15 minutes | |
| TRIOPLEX | Zika/Chikungunya/ Dengue | PCR | Serum | SST | Freeze | 1-3 days | 7 days | |
| NAAT | Nucleic Acid Amplification Test for CT and GC;<br>T. vaginalis;<br>M. genitalium | TMA | Endocervical<br>Vaginal<br>Urethral<br>Urine<br>Throat<br>Rectal | Aptima Collection Kit | Refrigerate | 1-3 days | 7 days | Urine cup received >24 hours after collection; Aptima collection container not collected and submitted per package insert<br><br>Male specimen not approved for T. vaginalis<br><br>Female urine not approved for T. vaginalis<br><br>Throat and Rectal source only approved for CT/GC |
| NAAT | Nucleic Acid Amplification Test for HSV 1 & 2 | TMA | Anogenital Lesion | Aptima Multitest Swab Collection Kit | Refrigerate | 1-3 days | 7 days | Aptima collection container not collected and submitted per package insert |

# REFERENCE RANGES

The reference range for each clinical chemistry test is listed below. This range is the 95th percentile of results from a study of apparently healthy individuals. The number tested and the gender distribution varies according to each analyte and is listed in the manufacturer's package insert.

| ANALYTE | REFERENCE RANGE | |
|---|---|---|
| ALP (alkaline phosphatase) | Male: | 40-129 U/L |
| | Female: | 35-104 U/L |
| ALT (alanine aminotransferase) | Male: | < 41 U/L |
| | Female: | < 33 U/L |
| AST (aspartate aminotransferase) | Male: | < 40 U/L |
| | Female: | < 32 U/L |
| Bilirubin, Total | Adults: | < 1.2 mg/dL |
| Cholesterol, Total | Adults: | < 200 mg/dL |
| HDL-Cholesterol | Adults: | > 59 mg/dL |

# Critical Values

| TEST | CRITICAL LOW (= OR <) | CRITICAL HIGH (= OR >) |
|---|---|---|
| Alkaline Phosphatase | None | None |
| Alanine Aminotransferase | None | 500 U/L |
| Aspartate Aminotransferase | None | 500 U/L |
| Bilirubin, Total | None | None |
| Cholesterol, total | None | None |
| HDL-Cholesterol | None | None |

**Critical Value -** An abnormal patient test result that may be potentially life-threatening. A test result in the critical range as listed in the table above requires the laboratory to:

1. Confirm the results by repeating and/or diluting.
2. Telephone the results to the patient's physician.
3. Document date, time, and person receiving results.

**Alert Value -** A patient's test result approaching critical value. The laboratory will notify the physician via hardcopy report.

# Emerging Infections and Biodefense

## General Elements

The ECPHL Emerging Infections and Biodefense Laboratory serves Erie County and the western 16 counties of New York as a Biological Reference Level laboratory within the Laboratory Response Network (LRN). The laboratory analyzes environmental samples for the identification of biothreat agents as directed by the LRN under permit through the **NYSDOH ELAP** regulatory agency. For environmental samples, the analysis is bacterial culture and PCR for *Bacillus anthracis, Francisella tularensis, Yersinia pestis, Brucella* spp., *Burkholderia* spp., Orthopox virus and Ricin toxin. In addition, the laboratory analyzes clinical specimens and isolates for the rule-out of biothreat agents submitted by sentinel laboratories under permit through **NYSDOH CLEP**. Analysis of clinical specimens submitted to ECPHL for biothreat agent rule-out may be tested for *Bacillus anthracis, Francisella tularensis, Yersinia pestis, or Brucella* spp. **Note:** This is specialized testing requiring laboratory preparation and trained personnel.

**It is important to notify the laboratory prior to collection.**

## Environmental Sample Collection

- Environmental samples include **direct** samples of small (less than 1 cubic foot) biothreat material such as powders, liquids or small particles and **indirect** samples such as swipes of larger environmental surfaces.
- All samples are collected by trained and experienced HAZMAT specialists who follow the NYSDOH CODE RED sampling protocol (see attachment #1).
- The decision to collect samples should follow a risk assessment by FBI WMD Coordinator or USPIS following investigation and a determination of "credible threat" by either of those agencies and/or their partners.
- Samples submitted for analysis are considered legal evidence for law enforcement purposes and will follow chain of custody (COC) requirements.
- The laboratory will only accept samples for analysis that it is permitted to perform. In addition, the submitted samples **must be screened** for radiological, chemical, and explosive hazards before acceptance into the laboratory.
- It is strongly advised that all submitting agencies **contact the laboratory prior** to sample collection both as notification for laboratory testing preparation and to ensure that proper methods of collection are followed.

## Collection Material

- Personal Protective Equipment **(PPE)**
  - Gloves, minimum 2 per sample
  - Appropriate respiratory protection
  - Protective clothing as necessary
- Permanent marker for sample labeling
- Evidence tape
- Sterile 2" x 2: Dacron gauze pads
- Sterile water or saline in 6oz/10mL vial
- Zippered plastic bags, minimum 3 per sample
- Sterile spatula, scoop etc.
- Large rigid transport container, plastic or cardboard
- 0.5% **bleach,** freshly diluted :10 (1 part bleach to 9 parts water)
- **ECPHL Biothreat Tracking Form and/or COC form** for each submitted sample

**Collection Procedure**
Collectors must be trained in CODE RED Biothreat sample collection or equivalent procedures prior to beginning threat assessment and sample collection. CODE RED sample collection should be performed as a two-person team consisting of a **Collector** (considered dirty) and a **Facilitator** (considered clean). If the collection area requires HAZMAT containment, **pre-label** the specimen containers as much as possible. It is very important if more than one sample is collected at the scene that each item is labeled for identification.

The following is an annotated collection procedure from CODE RED:

1. In a clean area, outside the contaminated zone, don 2 layers of sterile, disposable gloves, N95 respirator and all protective clothing deemed necessary.
2. For **Envelopes**: Collector will directly place item into zippered bag held open by Facilitator. Do not try to remove excess air from bag. Proceed to Step 5.
3. For **Bulk powder samples**: Collector will use a card and dry swab to move powder to a collection cup or bag held open by Facilitator. Proceed to Step 5.
4. For **Surface swipe samples**: Collector will use moist swab for small surfaces or moist gauze for larger areas. Use a gentle back and forth sweeping motion to cover the surface. Place swab or swipe into the cup or tube and place that container into a zippered bag. Proceed to Step 5.
5. Wipe the outside of the bag with the disinfecting bleach solution and place it in a second zippered bag and seal. Remove first layer of gloves and dispose properly.
6. Again wipe outside of second bag and place into a 3rd zippered bag and seal.
7. Place the triple-contained sample into a rigid-walled transport container, sealing with evidence tape.
8. Complete the laboratory requisition and chain of custody forms with all pertinent information.
9. Dispose of PPE properly or send to the laboratory for disposal.
10. It is expected that law enforcement will transport the samples and the completed forms to ECPHL for testing.

**Clinical Specimen Collection**
ECPHL will also accept clinical specimens for rule-out testing targeting *Bacillus anthracis*, *Brucella* spp., *Francisella tularensis*, and *Yersinia pestis* by PCR and subculture. These specimens must be submitted as a bacterial isolate on an agar slant or plate. For submission of direct clinical matrices, call the laboratory for information.

1. Notify ECPHL that a culture isolate from a clinical/patient source is being submitted for a rule-out of biothreat agents.
2. Include all results of testing performed by the submitting sentinel laboratory and complete an ECPHL laboratory requisition with all patient information and anatomical source. Please include the submitting laboratory contact information and the physician name and contact information.
3. Culture isolate should be grown on blood or chocolate agar, on a plate taped closed or on an agar slant in a screw capped tube. Place item in a zippered bag, decontaminate the outside with 0.5% freshly made bleach.
4. Place in a second zippered bag and then in a rigid transport carrier and deliver to the laboratory for testing.

If a biothreat agent is presumptively identified, the submitting sentinel laboratory is responsible for collecting and securing all subcultures and aliquots of the specimen as required by the Federal Select Agent Rule.

# Environmental Testing

**General Elements**
The Environmental Health Laboratory performs testing for the following:

**Drinking Water**
1. Bacterial Analysis
2. Mineral Content
3. Trace Metal Content
4. Trace Organics
5. Microcystins

**Environmental Water**
1. Bacterial Analysis
2. Mineral Content
3. Biological or Chemical Demand
4. Residue
5. Microcystins

**Dialysate Water**
1. Bacterial
2. Mineral
3. Metals
4. Endotoxin

**Sample Collection Procedures**
The laboratory will supply appropriate sample containers for all requested testing and will ONLY accept sample containers meeting test requirements as stated in the following procedures.

## Coliform Testing

| | |
|---|---|
| **Container** | Coliform/Colilert bottle |
| **Contents** | Sterile, with sodium thiosulfate |
| **Notes** | Do not open until ready to sample |

## Directions for Sampling

1. Select a sample point, the faucet that is representative of the service throughout the location. Do not choose a faucet connected to a storage tank. In addition, choose a site that looks clean.

2. If faucet is a *mixing type*, that is, one handle, carefully remove the faucet screen or aerator, if possible. Do NOT force removal.

3. Open cold water faucet and allow water to run for at least 2 to 3 minutes or sufficient time for service line to clear. If faucet is mixing type, run hot water for 2 minutes followed by cold water for 2 to 3 minutes. NOTE: If sample is collected from a well fitted with a hand pump, pump water for about 5 minutes before collection.

4. Reduce flow of water to avoid splashing.
   a. Unscrew cap but do not place it down on any surface to avoid contamination.
   b. Sample bottle contains a powder that will remove residual chlorine, if present.
   DO NOT RINSE OUT BOTTLE!

5. Fill the bottle just over the molded fill line that surrounds the bottle; cap immediately.

6. Bring sample to the testing laboratory by 2:00 PM the day of collection or refrigerate and deliver the next day. Sample must be processed **within 24 hours of collection.**

7. Complete a requisition for each sample bottle including:
   a. Date and time of collection
   b. Name of collector
   c. Sample location (address and location within the residence; i.e. “kitchen”)
   d. Billing address

NOTE: For questions please call (716) 898-6100

## Haloacetic Acids in Drinking Water

| | |
|---|---|
| **Container** | 250mL amber bottle |
| **Notes** | Sample bottle contains preservative. Do not open until ready to sample |

### Directions for Sampling

1. Select a sample point that is used mainly for drinking and cooking purposes, such as the kitchen faucet. Allow the water to run for at least 1 minute.

2. Unscrew the sample bottle cap, then immediately and slowly fill to the neck of the sample bottle being careful not to let the preservative out of the bottle.

3. Slowly screw the cap back on the bottle and deliver it to the testing laboratory.

4. Complete a requisition for each sample bottle including:
   a. Date and time of collection
   b. Name of collector
   c. Sample location (address and location within the residence; i.e. “kitchen”)
   d. Billing address

NOTE: For questions please call (716) 898-6100

**NOTE:** Common practice dictates collection of the sample after 2 to 3 minutes of flushing the faucet.

## Inorganics in Drinking Water

| | |
|---|---|
| **Container** | Inorganics |
| **Notes** | Used for sampling for the following tests:<br>Color, Total Dissolved Solids, Calcium/Total Hardness, Chloride, Fluoride, ortho-Phosphate, and Sulfate |

### Directions for Sampling

1. Select a sample point that is used mainly for drinking and cooking purposes, such as the kitchen faucet.

2. Turn on faucet and let cold water flush for 2 to 3 minutes.

3. Unscrew the sample bottle cap and slowly fill to the shoulder of the bottle just below the threaded portion of the bottle neck.

4. Screw cap back on the sample bottle and promptly deliver to testing laboratory in cooler containing ice. If sample cannot be delivered on the day of collection, place sample in refrigerator and keep cold until transport to the laboratory in a cooler on ice.

5. Complete a requisition for each sample bottle including:
   a. Date and time of collection
   b. Name of collector
   c. Sample location (address and location within the residence; i.e. “kitchen”)
   d. Billing address

NOTE: For questions please call (716) 898-6100

**NOTE: Color and ortho-Phosphate require analysis within 48 hours of collection.**

## Lead or Metals in Drinking Water

| | |
|---|---|
| **Container** | Metals bottle (also used for Calcium/Total Hardness) |
| **Notes** | Sample bottle is pre-cleaned in lab. Do not open until ready to sample |

## Directions for Sampling

1. Select a sample point that is used mainly for drinking and cooking purposes, such as the kitchen faucet.

2. Unscrew the sample bottle cap and turn on the faucet; immediately fill the sample bottle up to the shoulder of the bottle just below the threaded portion of the neck.

3. Screw cap back on the bottle and deliver the sample to the testing laboratory within one week from collection. The result generated from this sample will reflect possible lead contamination from this faucet only.

4. An optional second sample may be collected from the same faucet after allowing the faucet to flush for 2 to 3 minutes.

5. Complete a requisition for each sample bottle including:
   a. Date and time of collection
   b. Name of collector
   c. Sample location (address and location within the residence; i.e. “kitchen”)
   d. Billing address

NOTE: For questions please call (716) 898-6100

**NOTE:** Common practice dictates collection of an initial sample (immediately upon opening the faucet) and a second sample after 2 to 3 minutes of flushing the faucet. The initial sample represents potential lead contamination from the faucet, whereas the flushed sample represents lead contamination from your well or municipal service line.

## Nitrates or Nitrites in Drinking Water

| | |
|---|---|
| **Container** | Nitrate and nitrite bottle |
| **Notes** | Sample has an allowable hold time of 48 hours and laboratory can only accept samples Monday through Thursday; therefore, choose day when sample can be delivered after collection |

## Directions for Sampling

1. Select a sample point that is used mainly for drinking and cooking purposes, such as the kitchen faucet.

2. Turn on faucet (cold water) and let flush for a few minutes.

3. Unscrew the sample bottle cap and **slowly** fill the sample bottle to the shoulder of the bottle just below the threaded portion of the bottle neck.

4. Screw cap back on the sample bottle and return to laboratory **in a cooler containing ice**.

5. Complete a requisition for each sample bottle including:
   a. Date and time of collection
   b. Name of collector
   c. Sample location (address and location within the residence; i.e. “kitchen”)
   d. Billing address

NOTE: For questions please call (716) 898-6100

## THM Compounds in Drinking Water

| | |
|---|---|
| **Container** | Two 40mL amber vials |
| **Notes** | Two 40mL sample vials are pre-preserved in the lab. Do not open either vial until ready to sample |

### Directions for Sampling

1. Select a sample point that is used mainly for drinking and cooking purposes, such as the kitchen faucet. Allow that water to run for at least one minute.

2. Unscrew the sample bottle cap, then immediately and slowly fill the first sample vial until it is just about to overflow.

3. Slowly screw the cap back on the sample vial to prevent air bubbles in the vial.

4. Repeat the process explained in steps 1 thru 3 for the second sample vial.
   NOTE: Invert vial and verify that no air bubbles are present. If air bubbles are noticed, repeat steps 2 thru 3, slowly adding a few drops of water to the vial until no air bubbles are noticed.

5. **Transport vials to laboratory in cooler containing ice.**

6. Complete a requisition for each sample bottle including:
   a. Date and time of collection
   b. Name of collector
   c. Sample location (address and location within the residence; i.e. “kitchen”)
   d. Billing address

NOTE: For questions please call (716) 898-6100

NOTE: Common practice dictates collection of two sample vials after 2 to 3 minutes of flushing the faucet. The use of a Trip Blank (a contaminant-free water sample provided by the lab) is to compensate for any environmental contaminants that may be present during the transport and collection of samples between the sample source and the laboratory.

## Volatile Organic Compounds in Drinking Water

| | |
|---|---|
| **Container** | Two 40mL amber vials and a dropper bottle of HCl |
| **Notes** | Two 40mL sample vials are pre-preserved in the lab. A small dropper bottle containing dilute **hydrochloric acid** is obtained with the sample vials. Do not open either vial until ready to sample |

### Directions for Sampling

1. Select a sample point that is used mainly for drinking and cooking purposes, such as the kitchen faucet. Allow that water to run for at least one minute.

2. Unscrew the sample bottle cap, then immediately and slowly fill the first sample vial half way. Cautiously, add 5 drops of hydrochloric acid and continue filling the vial until it is just about to overflow. ***(Use hydrochloric acid with caution as it burns skin when spilled)***.

3. Slowly screw the cap back on the sample to prevent air bubbles in the vial and deliver to testing laboratory along with the hydrochloric acid dropper bottle.

4. Repeat the process in steps 1 thru 3 for the second sample vial.

5. **Transport vials to laboratory in cooler containing ice.**

6. Complete a requisition for each sample bottle including:
   a. Date and time of collection
   b. Name of collector
   c. Sample location (address and location within the residence; i.e. “kitchen”)
   d. Billing address

NOTE: For questions please call (716) 898-6100

NOTE: Common practice dictates collection of two sample vials after 2 to 3 minutes of flushing the faucet. The use of a Trip Blank (a contaminant-free water sample provided by the lab) is to compensate for any environmental contaminants that may be present during the transport and collection of samples between the sample source and the laboratory.

# Environmental Testing Chart - Sample: Drinking Water

| Code | Test Name | Method | Container (provided by ECPHL) | Storage | Allowable Time Collection to Test | TAT | Rejection Criteria |
|---|---|---|---|---|---|---|---|
| **BACTERIOLOGY** | | | | | | | |
| TC | Total coliform-E. coli | Colilert | Sterile with sodium thiosulfate, Bottled water | 2°-6°C | 30 hrs | 18-24 hrs | More than 30 hrs old |
| SPC | Standard Plate Count | Pour plate | Sterile with sodium thiosulfate, Bottle water | 2°-6°C | 8 hrs | 2-3 days | More than 8 hrs old |
| FC | Fecal Coliform | Membrane Filter | Sterile with sodium thiosulfate, Bottle water | 2°-6°C | 8 hrs | 2-3 days | More than 8 hrs old |
| | Microcystin | ELISA | 125mL amber container with sodium thiosulfate | <10°C | 14 days | 3 days | >10°C;<br>Submitted in container other than amber due to light sensitivity |
| **CHEMISTRY-INORGANICS-RESIDUES** | | | | | | | |
| TDS | Total Dissolved Solids | Evaporation | Inorganics | 2°-6°C | 7 days | 3 days | >6°C - FLAG*;<br>More than 7 days old |
| **CHEMISTRY-ORGANICS** | | | | | | | |
| HAA | Haloacetic acid | GC-ECD | 250mL amber vial | 2°-6°C | 14 days | 5 days | >6°C - FLAG*;<br>More than 14 days old |
| THM | Trihalomethanes<br>Microextractables | GC/MS<br>GC/ECD | 40mL amber vial with sodium thiosulfate | 2°-6°C | 14 days<br>28 days | 5 days | >6°C - FLAG*;<br>More than 14 days old |
| VOC | Volatile Organic Compounds | GC/MS | 40mL amber vial with ascorbic acid | 2°-6°C<br>pH<2 | 14 days | 5 days | >6°C - FLAG*;<br>Chlorine present;<br>pH>2 |
| **CHEMISTRY-METALS** | | | | | | | |
| | Aluminum | ICP/MS | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Antimony | ICP/MS | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Arsenic | ICP/MS | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Barium | ICP/MS, ICP/OES | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Beryllium | ICP/MS | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Cadmium | ICP/MS | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Calcium | IC, ICP/OES | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Chromium | ICP/MS | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Copper | ICP/MS, ICP/OES | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Iron | ICP/OES | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Lead | ICP/MS, ICP/OES | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Magnesium | IC, ICP/OES | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Manganese | ICP/MS, ICP/OES | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |

| Code | Test Name | Method | Container (provided by ECPHL) | Storage | Allowable Time Collection to Test | TAT | Rejection Criteria |
|---|---|---|---|---|---|---|---|
| | Mercury | ICP/MS | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Nickel | ICP/MS | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Potassium | IC, ICP/OES | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Selenium | ICP/MS | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Silver | ICP/MS | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Sodium | IC, ICP/OES | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Thallium | ICP/MS | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Zinc | ICP/MS, ICP/OES | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| **CHEMISTRY-INORGANICS** | | | | | | | |
| | Alkalinity | Titrimetric | Alkalinity<br>*Fill completely to exclude all air | 2-6°C | 14 days | 5 days | Air present in container;<br>More than 14 days old;<br>>6°C - FLAG* |
| | Calcium, hardness | Titrimetric, IC calculation | Metals, Inorganics | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Chloride | IC | Inorganics | 18-24°C | 28 days | 5 days | More than 28 days old |
| | Color<br>Prior notification needed | Visual | Inorganics | 2-6°C | 48 hrs | 24 hrs | >6°C - FLAG*;<br>More than 48 hrs old |
| | Cyanide | Lachat FIA | Cyanide | 2-6°C | 14 days | 5 days | >6°C - FLAG*;<br>More than 14 days old |
| | Fluoride | IC | Fluoride | 18-24°C | 28 days | 5 days | More than 28 days old |
| | Nitrate | Lachat FIA/IC | Nitrate, chlorinated | 2-6°C | 14 days | 10 days | >6°C - FLAG*;<br>More than 14 days old |
| | Nitrate | Lachat FIA/IC | Nitrate, non-chlorinated | 2-6°C | 48 hrs | 24 hrs | >6°C - FLAG*;<br>More than 48 hrs old |
| | Nitrite | Spectrophotometer/ IC, FIA | Nitrite | 2-6°C | 48 hrs | 24 hrs | >6°C - FLAG*;<br>More than 48 hrs old |
| | pH<br>Prior notification needed | Electrometric | P or G | 18-24°C | None- Test Immediately | 24 hrs | More than 1 hr old |
| | Phosphate (ortho-) | IC, Spectrophotometric | Inorganics | 2-6°C | 48 hrs | 24 hrs | >6°C - FLAG*;<br>More than 48 hrs old |
| | Sulfate | IC | Inorganics | 2-6°C | 28 days | 5 days | >6°C - FLAG*;<br>More than 48 hrs old |

*****FLAG: External comment will be added to report

# Environmental Testing Chart - Sample: Environmental Water and Solids

| Code | Test Name | Method | Sample | Container (Provided by ECPHL) | Storage | Allowable time Collection to Test | TAT | Rejection Criteria |
|---|---|---|---|---|---|---|---|---|
| **BACTERIOLOGY** | | | | | | | | |
| TC | Total coliform | Membrane filter quantitation | Pools, Zoo, EW, Irrigation | Coliform | 2-6°C | 8 hrs | 24 hrs | More than 8 hrs old |
| TC-SPC | Total coliform, SPC | Pour plate | Frozen dessert | Sterile | -4°-0°C | No set time | 24-48 hrs | >0°C - FLAG* |
| FC | Fecal coliform | Membrane filter quantitation, Colilert | EW, Beach, Zoo | Coliform | 2-6°C | 8 hrs | 24 hrs | More than 8 hrs old |
| EC | *E.coli* | Membrane filter quantitation | Beach, EW, Irrigation | Coliform | 2-6°C | 8 hrs | 24 hrs | More than 8 hrs old |
| ENT | Enterococci | Membrane filter quantitation | Beach, EW | Coliform | 2-6°C | 8 hrs | 24 hrs | More than 8 hrs old |
| SPC | Standard Plate Count | Pour Plate | EW, Pool | Sterile with sodium thiosulfate | 2-6°C | 8 hrs | 2 days | More than 8 hrs old |
| | Sterility/Biological Indicator | Culture | Other | Attest vials | 18-24°C | ≤5 days | 2 days | Cracked or leaking vials |
| | Microcystins | ELISA | Ambient, EW | 125mL amber container with sodium thiosulfate | <10°C | 14 days | 3 days | >10°C; Submitted in container other than amber due to light sensitivity |
| | Food | Culture | 2x2 inch food sample | Sterile whirl pack | 2-6°C or <0°C | 24 hrs | 7 days | >6°C; More than 24 hrs old |
| | Frozen Desserts | TC, SPC - Pour Plate | Frozen Dessert | Sterile Cup with lid | <0°C | 1 month | 7 days | Samples thawed; > 0°C (>32°F) |
| **CHEMISTRY-INORGANIC-RESIDUES** | | | | | | | | |
| TS | Total Solids | Evaporation | EW | Inorganics | 2-6°C | 7 days | 3 days | >6°C - FLAG*; More than 7 days old |
| TDS | Total Dissolved Solids | Evaporation | EW | Inorganics | 2-6°C | 7 days | 3 days | >6°C - FLAG*; More than 7 days old |
| TSS | Total Suspended Solids | Evaporation | EW | Inorganics | 2-6°C | 7 days | 3 days | >6°C - FLAG*; More than 14 days old |
| SS | Settleable Solids | Imhoff Cone | EW | Inorganics | 2-6°C | 48 hrs | 24 hrs | >6°C - FLAG*; More than 48 hrs old |
| **CHEMISTRY-INORGANICS** | | | | | | | | |
| BOD | Biochemical Oxygen Demand | Electrode | EW | Quart bottle, P/G | 2-6°C | 2 days | 5 days | >6°C - FLAG*; More than 48 hrs old |
| | Chloride | IC | EW | Inorganics | 18-24°C | 28 days | 5 days | More than 28 days old |

*FLAG: External comment will be added to report

| Code | Test Name | Method | Sample | Container (Provided by ECPHL) | Storage | Allowable time Collection to Test | TAT | Rejection Criteria |
|---|---|---|---|---|---|---|---|---|
| | Color<br>Prior notification needed | Visual | EW | Inorganics | 2-6°C | 48 hrs | 24 hrs | >6°C - FLAG*<br>More than 48 hrs old |
| | Cyanide | Lachat FIA | EW | Cyanide | 2-6°C<br>pH>12 | 14 days | 5 days | >6°C - FLAG*;<br>pH<12 - FLAG*;<br>More than 14 days old |
| | Fluoride | IC | EW | Fluoride | 18-24°C | 28 days | 5 days | More than 28 days old |
| | Hardness | EDTA titrimetric, IC - calculation | EW | Metals | 18-24°C | 6 months | 10 days | More than 6 months old |
| | Nitrate | Lachat FIA/IC | EW non-chlorinated | Nitrate, non-chlorinated | 2-6°C | 48 hrs | 2 days | >6°C - FLAG*;<br>More than 48 hrs old |
| | Nitrite | Spectrophotometer/ IC, FIA | EW | Nitrite | 2-6°C | 48 hrs | 48 hrs | >6°C - FLAG*;<br>More than 48 hrs old |
| | Phosphate (ortho-) | IC, Spectrophotometric | EW | Inorganics | 2-6°C | 48 hrs | 24 hrs | >6°C - FLAG*;<br>More than 48 hrs old |
| | Sulfate | IC | EW | Inorganics | 2-6°C | 28 days | 5 days | >6°C - FLAG*;<br>More than 28 days old |
| | Turbidity | Nephelometric | EW | Inorganics | 2-6°C | 48 hrs | 24 hrs | >6°C - FLAG*;<br>More than 48 hrs old |

*FLAG: External comment will be added to report

# Environmental Testing Chart - Sample: Dialysis Fluids

| Code | Test Name | Method | Container (provided by ECPHL) | Storage | Allowable Time Collection to Test | TAT | Rejection Criteria |
|---|---|---|---|---|---|---|---|
| | DF Inorganics<br>- Fluoride<br>- Nitrate<br>- Sulfate | IC | Inorganics | 2-6°C | 14 days | 5 days | >6°C - FLAG*;<br>More than 14 days old |
| | DF Metals<br>- Aluminum<br>- Antimony<br>- Arsenic<br>- Barium<br>- Beryllium<br>- Cadmium<br>- Chromium<br>- Copper<br>- Lead<br>- Mercury<br>- Selenium<br>- Silver<br>- Thallium<br>- Zinc | ICP/MS | Metals | 18-24°C | 6 months | 5 days | More than 6 months old |
| | DF Cations<br>- Calcium<br>- Magnesium<br>- Potassium<br>- Sodium | IC | Metals | 18-24°C | 6 months | 5 days | More than 6 months old |
| | DF LAL<br>- Endotoxins | LAL | Sterile Test Tube | 2-6°C | 72 hrs | 48 hrs | More than 72 hrs old |
| | DF Bacteriological<br>- Standard Plate Count | Pour Plate | Sterile with sodium thiosulfate | 2-6°C | 24 hrs | 48 hrs | More than 24 hrs old |

*****FLAG: External comment will be added to report

Attachment #1

## NYSDOH Code Red

**CODE RED**
**Biological Agent Sampling Protocol**

Please read all sections of this card before initiating Sample Assessment or Collection.

If people on the scene have become ill after exposure, a chemical or toxin event is likely. Avoid area and contact Fire/HazMat (NYS Fire 518-474-6746) immediately.

Not for use in NYC. If within NYC jurisdiction, please call the NYC DOHMH at 212-447-1091 for specimen collection guidance.

**REMEMBER...**

- Minimize sample handling.
- Only HAZMAT should open sealed packages.
- Minimize dispersal of aerosols.
- Contact Wadsworth Center Lab.
- Complete NYSPIN BIO1 formatted message.

(1)

**COLLECTION MATERIALS (PER SAMPLE)**

2 pair of protective gloves **per person**
N95 (or better) respirator
2 Ziploc bags
Fresh 10% bleach (decontamination solution)
Documentation
1 hard-sided container or Tupperware
Evidence tape

**SAMPLE SWIPE KIT**

One 2x2 inch, sterile, non-cotton gauze
Small bottle sterile liquid (saline or water)

**TESTING LABS**

| | |
|---|---|
| Wadsworth Center Lab: | (518) 474-4177 |
| Erie County Lab: | (716) 898-6100 |
| Westchester County Lab: | (914) 231-1610 |
| NYSDOH After Hours Duty Officer: | (866) 881-2809 |

**LAW ENFORCEMENT**

| | |
|---|---|
| Albany FBI: | (518) 465-7551 |
| Buffalo FBI: | (716) 843-4300 |
| New York City FBI: | (212) 384-1000 |

Regional NYSP: _____
UNYRIC: (866) 4-UNYRIC

**Mandatory Notification:**
Alert Upstate New York Regional Intelligence Center (UNYRIC), via NYSPIN
BIO1 Format Message: (type CRTL-A) BIO1 (XMIT)

Local Health Dept: _____

(2)

**BIOHAZARD SAMPLING SOP**

**C**ontrol Scene
Restrict access, contain area, minimize airflow around specimen, record names and contact information of people in area.

**O**pen Dialog
Call appropriate law enforcement, Wadsworth Center, and local health (page 2).

**D**etermine Biohazard Credibility
In collaboration with above groups, evaluate using Credible Biohazard Criteria (page 4).

**E**mploy Collection Protocol
Gather Collection Material (page 2) and if necessary Sample Swipe Kit (page 2). Follow Annotated Collection Procedure (page 5)

**R**emove Contamination
Use 10% bleach for solid surfaces and outer package, remove personal protective equipment (PPE), wash hands.

**E**nter Information
Fill out BD Custody and BD Submission forms (available on CTN or HAN).

**D**ispatch Specimen
Coordinate transport, notify testing lab with ETA, dispatch specimen and documentation, launder clothes after shift.

(3)

Evaluate biohazard threat using Criteria below.
**Call Wadsworth Center Biodefense Laboratory at (518) 474-4177 to help in assessment as Criteria may change after an event.**

**These questions are meant to HELP evaluators make decisions on-site.** Evaluators should use their professional judgment to collect and submit samples for laboratory testing.

**CREDIBLE BIOHAZARD CRITERIA**

1) Was there a THREAT?
2) Was there VISIBLE MATERIAL?
3) Was there an UNCERTAIN ORIGIN?
4) Was there an EXPOSURE?

**RESULT A:** Answer is YES to Criteria 1 (regardless of others). **Potential crime.** Collect and treat sample as evidence for criminal prosecution. Discuss need for laboratory testing with Wadsworth Center.

**RESULT B:** Answer is YES to Criteria 1, 2, 3, 4. **Potential biohazard and crime.** Collect and treat sample as evidence for criminal prosecution. Submit to lab.

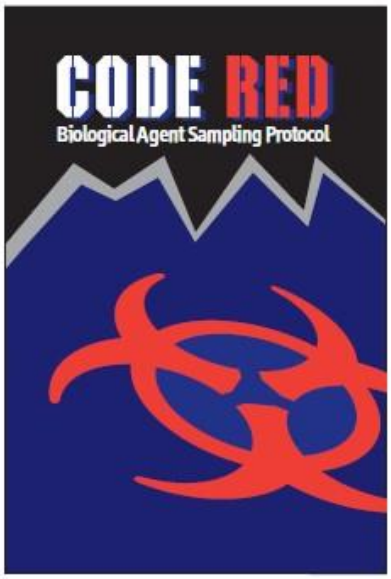
**RESULT C:** Sample does not meet Result A or B criteria. Treat as nuisance material. Collect and dispose of according to local SOP.

(4)

**Annotated Collection Procedure** (annotated from BD Environmental Sampling Protocol available on HAN and CTN)

1. Get Collection Materials.
2. Don appropriate PPE in clean area.
3. If sample (e.g., letter) will fit directly into Ziploc bag, do so and skip to Step 8, otherwise get Sample Swipe Kit and proceed to Step 4.
4. Open sterile gauze square.
5. Dampen gauze with sterile liquid (should NOT be dripping wet).
6. Take one open Ziploc bag and dampened gauze to collection site.
7. Touch wet gauze to powder or swipe surface (~ 10 inches X 10 inches) and place gauze in Ziploc bag.
8. Hand bag to second person wearing gloves to close (don't force air out of bag).
9. Remove gloves and place in second bag.
10. Have second person place bag containing sample in second bag (containing gloves from step 9) and seal.
11. Have second person spray outside of outer bag with 10% bleach.
12. Place decontaminated bags in hard-sided container and close.
13. Secure access to container with 2 inches of evidence tape.
14. Remove PPE and wash hands with soap and water for 3 minutes.
15. Proceed to Enter Information.

(5)




State of New York • George E. Pataki, Governor
Department of Health • Antonia C. Novello, M.D., M.P.H., Dr. P.H., Commissioner
7063 08/04

Attachment #2

# NYS Guidance on Initial Response to a Letter/Container Containing a Suspicious Substance and/or Threat Statement

**This is a restricted document for official use only.**

**The document may be accessed by authorized individuals at the NYS Health Commerce website or may be obtained by contacting the Erie County Public Health Laboratories.**

## References

1. Leber, Amy L. Specimen Collection, Transport, and Acceptability 2016 ASM. Washington DC

2. Clinical Laboratory Standards of Practice 2019 Wadsworth Laboratory, Albany NY

3. Environmental Laboratory Approval Program Certification Manual 2018, Albany NY

4. Erie County Public Health Laboratory Specimen Collection and Transport Manual 2019, Buffalo NY