Public Health Laboratory

Guide to Laboratory Services

SC DHEC Public Health Laboratory
James A Hayne Building
8231 Parklane Road
Columbia, SC 29223

August 2020

Guide to Laboratory Services
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Purpose

The purpose of this manual is to provide our clients with information about the laboratory testing availability and to provide a guide for collecting and submitting specimens.

This edition can also be accessed on SC DHEC website at:
http://www.scdhec.gov/Health/FHPF/LabCertificationServices/LabServicesGuide/

Mission Statement

The mission of the Public Health Laboratory (PHL) is to provide specialized laboratory testing for accurate screening, diagnosis, prevention and surveillance of disease, foodborne illness, and congenital disorders to improve public health and the quality of life for the South Carolina community.

General Information

Laboratory Certification for Clinical Testing- CLIA ID# 42D0658606

The Public Health Laboratory of S.C. Department of Health and Environmental Control, formerly named the Bureau of Laboratories, is a multi-disciplinary, integrated source of diagnostic services including analytical support and consultation for physicians, private laboratories, hospitals, and county health departments. The Public Health Laboratory is prepared to assist in any national public health emergency.

Physical Address
The Public Health Laboratory is located in the James A. Hayne Building at 8231 Parklane Road, Columbia, South Carolina 29223, on the campus of the State Park Health Center. State Park is located between Highway 555 (Farrow Road), Parklane Road and the I-77 connector (or S.C. I-277) two miles north of I-20; 2 miles west of Columbia Mall. Using the Parklane Road Entrance, the Hayne Building is at the end of the first left turn.

Hours of Business
The official working hours are from 8:00 A.M. to 4:00 P.M. Monday through Friday.

After Hours, Weekend and Holiday
The laboratory maintains an On-Call Roster for all weekends and holidays. Individuals requesting information or services of an emergency nature can call the main number, 803-896-0800. This number transfers to an answering service who will contact the Director on call.

A list of state holidays for 2020 can be found on the SCDHEC website at:
https://www.scdhec.gov/about-dhec/state-holidays.

Emergency Response/ Disaster Preparedness
As part of the DHEC's Emergency Preparedness Plan of Action, the Public Health Laboratory is equipped and the staff is trained to respond rapidly and effectively to a medical emergency, natural disaster or Act of Bioterrorism. If the emergency occurs outside of regular working hours, personnel will be called back or work overtime as needed to provide laboratory support.

Specimen Receiving

Specimens transported by DHEC's courier service are placed in specially marked boxes and are picked up by lab staff from the Sims-Aycock building between 5:00 AM and 6:00 AM Tuesday through Friday. Specimens sent by first class mail are picked up by lab staff from the U.S. Post Office at 8:30 AM Monday through Friday. The U.S. Post Office delivers at approximately 12:30 PM, Monday through Friday.

On Saturday and DHEC observed nonfederal holidays, specimens are picked up by laboratory staff between 7:00 AM and 8:00 AM from the Sims-Aycock building and the U.S. Post Office. These are sorted and stored according to established protocol to be accessioned on the next working day.

Specimens are accepted at the Hayne Building during business hours of 8:00 AM to 4:00 PM Monday through Friday, except for state holidays. Private couriers delivering specimens at the back entrance of the Hayne Building should call Specimen Management Section at 803-896-0898 for pick up. Private individuals delivering specimens must enter the building through the front entrance. The Security Officer at the front desk will assist them.

After-Hours Delivery of Specimens

Specimens other than Newborn Screening samples will not be accepted after hours unless special arrangements have been made with the laboratory section conducting the test. This person will notify the Security Officer on duty that a delivery is expected.

The after-hours depository located in the rear of the Hayne Building is for animal heads being delivered for rabies testing only. Please do not put specimens and cultures in the depository.

Newborn screening specimens can be accepted at the Security Desk of the Hayne Building after business hours. Couriers delivering from hospitals will sign the specimens in on a log kept at the Security Desk. Holiday and Saturday delivery of Newborn screening specimens shipped using FedEx/UPS can also be accepted by the Security Desk.

Contact Persons and Phone Numbers

(Area Code 803)

Laboratory Test Results……..……896-0800
Laboratory Request Forms/Mailing Containers……..896-0913
Facilities Maintenance (Laboratory Instrument Services)……..896-0919
Laboratory Director……....896-0965
Assistant Laboratory Director…….....896-9725
Director, Chemistry Division……..……896-0991
Director, Microbiology Division…….……...896-0870
Support Division Manager……..896-2331
Director, Logistic Division……..……...……896-0923
Office of Quality Assurance ……..... 896-3897
Office of Laboratory Safety……..... …896-0956
Laboratory Information Management Systems (LIMS) Administrator.....896-4777

Testing Policies

Persons Authorized to Order Tests

The Laboratory will accept clinical laboratory specimens for testing from physicians, health departments, and hospital laboratories, or as provided by South Carolina statues. These senders will be responsible for receiving, relating, interpreting, and/or distributing the data. A clinical laboratory specimen is described as any material derived from the human body for the purpose of diagnosis, prevention, treatment or assessment for medical or legal purposes. Inanimate substances and other samples submitted for examination (e.g., food samples, animal heads for rabies, veterinary specimens, etc.) may be accepted from private citizens at the discretion of the Division Director, Laboratory Supervisor, or Laboratory Director.

Verification of Orally Ordered Tests

When additional tests are requested by telephone, the caller is asked to follow up with a written request on letterhead, or an additional laboratory request form for the test(s) requested. Please send written request to the attention of the Specimen Management Section or to the Laboratory Supervisor. The additional test(s) will not be performed until the written request is received. With time sensitive tests, the specimen may be tested immediately and the results held until the written request is received. In this case the caller may fax the request to the Laboratory. The caller should obtain the proper fax number at the time of their request. To process and test a specimen without a written request, the oral request is recorded in the telephone log of the area receiving the call: Exception: No HIV tests will be performed without written request at the time of testing. All blood specimens will be discarded if a written request is not received within seven working days.

Requesting Repeat Testing on a Serology Specimen

To request a repeat serology test call Specimen Management Section at (803) 896-0898. Specimens are discarded after seven working days. A retest request must be made within that time period. Repeat testing on the same specimen may not always be feasible. The testing laboratory may request additional information to determine the best approach. In some cases, a second (new) specimen for testing may be recommended. In other cases, the patient's clinical history may provide an explanation for the initial result, and retesting may not be necessary.

Specimens Referred for Testing to CDC

Laboratories wishing to send specimens directly to CDC should contact the Microbiology Division at (803) 896-0870. The sender will be assigned a State Health Department number and will be asked to fax or mail to the Laboratory a copy of the information being sent. CDC forms are also available from the Laboratory.

Other Reference Laboratories

If a specimen is sent to a reference laboratory for initial, follow-up or verification testing by the Public Health Laboratory, the sender will be notified that the specimen has been referred. Either the original result report from the reference laboratory is forwarded or faxed to the sender, or the results will be reported using the PHL's laboratory information system noting where the test was performed. A copy of the report is maintained by the laboratory.

Stat Testing
Requests received in the morning will be put in the day's run. The results will be telephoned to the requestor, followed by a hard copy report or electronic accessible report. If the request is for a test that will not be performed immediately, the requestor will be informed by telephone when the test will be performed and the result available.

Confirmatory Testing
When confirmatory tests are necessary, patient results are not released until all testing is completed.

Laboratory Specimens Sent to the Public Health Laboratory in Error
Specimens sent to the laboratory in error will be returned to the sender as soon as possible.

Correction of Patient Information
All requested changes to the request form by the sender must be documented on letterhead, dated and signed by the requestor. A returned copy of the original laboratory report requesting the missing information is acceptable to communicate changes needed as long as the sender states clearly what is needed, dates, and signs the report. The patient's record will be updated to reflect the change.

Specimen Rejection & Disclaimer Criteria

"Exceeds 24 Hours Limit for Valid Testing"
The following tests have a 24 hour specimen limit for valid testing and CANNOT be collected and/or sent any Friday or 24 hours BEFORE a state holiday: Hepatitis C Quantitation by PCR (RNA), HIV-1 PCR Quantitative (RNA), CBC, CD4 and/or Malaria specimen sent as an EDTA tube with no thick and/or thin smear.

The following disclaimers are considered universal rejections as they apply to all specimens submitted for testing. Specific test related rejections are listed in the Alpha Listing of Test (Section II) and the Collection Procedures (Section III).

No Specimen Received
When a request form is received without a specimen, a computer inquiry is made to determine if the specimen has been received with another test request. If so, the specimen is obtained and aliquoted for all tests. If no specimen is found, the request form is numbered, processed, and reported "No specimen received."

No Request Form Received
If a specimen is received without a request form and the sender cannot be identified from the specimen label, the specimen will be held awaiting telephone inquiry or delayed receipt of form. After seven days, the blood specimen is discarded. Gen-Probe Aptima swab specimen is discarded after 60 days and the Gen-Probe Aptima urine specimen is discarded after 30 days.

No Name on Specimen
When a specimen is received without an identifying number or patient name, it WILL NOT be tested. An exception may be made for a specimen that cannot be recollected because of its unique anatomic source, collection method or time of collection. Examples include: CSF, peritoneal pleural and synovial fluids, autopsy, biopsy, or organ specimens, and specimens collected prior to the initiation of antimicrobial therapy.

No Name on Request Form
When a request form is received without a name, and there is no other identification on the form that matches the information on the specimen, a call is placed to the submitter requesting a corrected copy. An exception will be reported as "No name on form" if corrected copy NOT received by completion of specimen processing.

No Test Requested
When a specimen is received, and there is no test marked on the request form and the sender is known, the specimen will be reported as "No test marked. If you would like this specimen tested, write the test number on this form and send to the lab. We will discard the specimen 7 days after the date received, shown above." Note: Only the blood specimen is discarded after 7 days. When the corrected request form is received, the specimen will be tested. Note: If the specimen received has a 24 hour limit for valid testing; the sender will be notified by phone to fax a corrected request form.

Other Missing Information
If other necessary information is missing, the specimen will be tested and the missing information will be requested by phone, fax, or mail. The result will be held until the missing information is received.

Mismatched Information
When the name on the request form and the specimen do not match, the specimen will not be tested. It will be reported as, "Name on specimen differs from name on request form."

Partial Information Matches
When there is a partial name match and other data on the request form matches, it is most probably the same patient. The name on the tube is written on the request form, and the test is run and a disclaimer added to the report.

Specimen Broken or Leaked in Transit
When a broken or leaking specimen is received, every attempt will be made to salvage it without compromising the integrity of the specimen.

Incorrect Specimen Received
If the specimen received is incorrect for the test requested, a search is initiated to determine if the correct specimen was received with a request form for a different test. If the specimen is found, testing will be done. If the specimen is not found, the specimen is reported as, "incorrect specimen submitted."

Unsatisfactory Specimens
Specimens collected for tests that have a 24 hour specimen limit for valid testing CANNOT be collected and/or sent any Friday or 24 hours BEFORE a state holiday: Hepatitis C Quantitation by PCR (RNA), HIV-1 PCR Quantitative (RNA), CBC, CD4 and/or Malaria specimen sent as an EDTA tube with no thick and/or thin smear.

The Public Health Laboratory will not examine and will discard specimens which are received in unsatisfactory condition. The reasons for the rejection will be reported to the sender on the standard laboratory report form. Unsatisfactory conditions include but are not limited to:

Hemolyzed, chylous, or contaminated specimen,
Specimen received beyond the acceptable time for testing,
Specimen collected too soon or too late during the disease-state for the test requested,
Specimen was stored and shipped at improper temperature,
Specimen is nonviable, or decomposed,
Specimen quantity insufficient

Specimens that have some degree of hemolysis, icteric, or chylous, will be tested if the degree of hemolysis or lipemia does not interfere with the examination. The undesirable condition will be indicated on the report form.

Results Reporting Policies
All laboratory reports generated are considered confidential information. The reports will be released only to authorized persons. Reports can be accessed via the internet through a laboratory web portal, this allows instant and real access to results. Reports are mailed daily to clients without access to the laboratory web portal. Clients can only view information on orders that have been logged in with their customer ID. Contact the laboratory at 803-896-4777 for more information.

Telephone Results
Panic or Critical Values or Life-Threatening results and/or public health emergencies are telephoned to the appropriate person. A result will not be left on voice mail or an answering machine. A message to call the Public Health Laboratory for a report will be left.

Copies of Test Reports
Newborn Screening: Laboratory reports are available via the internet through use of a laboratory web portal to the hospital submitting the specimen and to the physician whose name has been entered on the request form as the healthcare provider. If no attending physician is listed, only the hospital or submitter of the specimen will have access to the report. **All other tests**: Reports can be accessed via the internet, and one copy is mailed to the name entered in the sender section of the request form. We regret that we cannot honor requests for multiple copies. If multiple copies of other test reports are needed, we suggest you photocopy the original report issued.

Remailing of Test Reports
If a physician or clinic to which the patient has been referred requests a copy of a test result, the report will be reprinted with the original sender number and mailed as requested. If the report is not received, please call 803-896-0800 or 803-896-4777.

Correcting Reporting Errors
If an error or the possibility of an error is discovered by the laboratory after results have been mailed or accessed via result point, the sender will be notified immediately by telephone. The error will be explained and the correct result given. A corrected report will be issued with the comment, “Corrected Report”.
If an error in reporting is discovered by the sender, the laboratory should be notified immediately. The error will be corrected, and an updated report will be generated. This corrected report will include the comment, “Corrected Report”.

Disease Reporting
The Code of Laws of South Carolina (1976) Section 44-29-10: Regulation 61-20 mandates that the Commissioner of DHEC is to publish annually a list of diseases to be reported by physicians and laboratories. This list can be found on the Internet at https://scdhec.gov/sites/default/files/Library/CR-009025.pdf.

All communicable disease outbreaks and unusual disease occurrences should be reported, so that appropriate control measures can be implemented.

SECTION II

ALPHA LISTING OF TEST INFORMATION

Test	BACILLUS ANTHRACIS
Synonym:	Anthrax
Lab Section/Phone:	Special Pathogens / Daytime - (803) 896-0777 or Evenings - (803) 767-8118
Days Performed:	As needed
Turnaround Time:	72 hours
Specimen Required:	Clinical samples / isolates
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	Determined during pre-approval consultation.
Specimen Volume (minimum):	Determined during pre-approval consultation.
Collect:	Clinical sample / Pure isolate on slant
Form:	DHEC 1335; Test Number 520; "Suspect Agent" = *Bacillus anthracis* DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	Specimen must be pre-approved by Special Pathogens Supervisor prior to submission.
Packing and Shipping*:	Special handling criteria apply. Please contact the laboratory for special instructions at 803-896-0777 / 803-767-8118
Transport Conditions:	Determined during pre-approval consultation.
Specimen Rejection Criteria:	Determined during pre-approval consultation.
Availability:	24 hours / 7 days a week
Results and Interpretations:	Preliminary results (when applicable) and final results are verbally communicated to the sender to ensure correct interpretation. Final reports are provided via fax or e-mail.
Additional Information:	*Bacillus anthracis* is designated as a Tier 1 Select Agent (Select Agent Regulation, 42 CFR, 73, Final Rule). In the event of *Bacillus anthracis* detection, the Special Pathogens Laboratory will assist the sender in the timely submission of the required federal documentation.
Purpose of Test:	To detect *B. anthracis* in clinical samples or referred isolates.
Method:	A variety of sentinel and Laboratory Response Network (LRN) Methods are used to detect Bacillus anthracis.
Interfering Substances:	N/A
Comment:	Please call the Special Pathogens Laboratory with any questions or concerns.

Test	BRUCELLA
Synonym:	Brucellosis
Lab Section/Phone:	Special Pathogens / Daytime - (803) 896-0777 or Evenings - (803) 767-8118
Days Performed:	As Needed
Turnaround Time:	7- 21 days from time of sample receipt in the laboratory
Specimen Required:	Clinical Samples / isolates
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	Determined during pre-approval consultation.
Specimen Volume (minimum):	Determined during pre-approval consultation.
Collect:	Call the Special Pathogens Laboratory.
Form:	Form 1335; Test Number 520; "Suspect Agent" = *Brucella sp.* DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	Specimen must be pre-approved by Special Pathogens Supervisor prior to testing.
Packing and Shipping*:	Special handling criteria apply. Please contact the laboratory for special instructions at 803-896-0777 / 803-767-8118.
Transport Conditions:	Determined during pre-approval consultation.
Specimen Rejection Criteria:	Determined during pre-approval consultation.
Availability:	24 hours / 7 days a week
Results and Interpretations:	Preliminary (when applicable) and final results are verbally communicated to the sender to ensure correct interpretation. Final reports are provided via fax or e-mail.
Additional Information:	*Brucella* abortus, *melitensis*, and *suis*. are designated as Select Agents (Select Agent Regulation, 42 CFR, 73, Final Rule). In the event of *Brucella* detection, the Special Pathogens Laboratory will assist the sender in the timely submission of the required federal documentation.
Purpose of Test:	To detect Brucella organisms in clinical samples / To confirm suspect isolates
Method:	A variety of sentinel and Laboratory Response Network (LRN) Methods are used to detect and speciate *Brucella* organisms.
Interfering Substances:	N/A
Comment:	Please call the Special Pathogens Laboratory with any questions or concerns.

Test	BRUCELLA ANTIBODY (TOTAL) by AGGLUTINATION
Synonym:	Brucella Microagglutination Test (BMAT)
Lab Section/Phone:	Special Pathogens / (803) 896-0777 or (803) 767-8118
Days Performed:	Monday-Thursday
Turnaround Time	5 days
Specimen Required:	Serum
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	2 mL
Specimen Volume (minimum):	500 uL
Collect:	Serum Separator Tube (SST).
Form:	Form 1335; Test Number 522; check "BMAT". DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	Specimen must be pre-approved by Special Pathogens Supervisor prior to testing.
Packing and Shipping*:	Special handling criteria apply. Please contact the laboratory for special instructions at 803-896-0777 / 803-767-8118.
Transport Conditions:	Serum samples should be maintained and shipped refrigerated
Specimen Rejection Criteria:	Hemolysis; lipemia; gross bacterial contamination
Availability:	As needed
Results and Interpretations:	- A single serum titer of 1:160 or higher is suggestive of exposure to Brucella at some time. Titer results $\geq$ 1:160 will automatically reflex to a repeat test with the "reduced" serum for acute/convalescence determination. - Cross-reactions may occur between *Brucella* and *F. tularensis* antigens and antisera - Preliminary (when applicable) and final results are verbally communicated to the sender to ensure correct interpretation. Final reports are provided via fax or e-mail.
Additional Information:	N/A
Purpose of Test:	To presumptively detect smooth strain brucella antibodies in human sera. This test will not detect exposure to *Brucella canis* or *Brucella abortus RB51* rough strains.
Method:	Semi-Quantitative Agglutination
Interfering Substances:	Hemolysis; lipemia; gross bacterial contamination
Comment:	Please call the Special Pathogens Laboratory with any questions or concerns.

Test	BURKHOLDERIA MALLEI
Synonym:	Glanders
Lab Section/Phone:	Special Pathogens / Daytime - (803) 896-0777 or Evenings - (803) 767-8118
Days Performed:	As needed
Turnaround Time	7 to 10 days from the time of sample receipt in the laboratory.
Specimen Required:	Clinical Samples / isolates
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	Determined during pre-approval consultation.
Specimen Volume (minimum):	Determined during pre-approval consultation.
Collect:	Determined during pre-approval consultation.
Form:	DHEC 1335; Test Number 520; "Suspect Agent" = B. mallei DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	Specimen must be pre-approved by Special Pathogens Supervisor prior to testing.
Packing and Shipping*:	Special handling criteria apply. Please contact the laboratory for special instructions at 803-896-0777 / 803-767-8118.
Transport Conditions:	Determined during pre-approval consultation.
Specimen Rejection Criteria:	Determined during pre-approval consultation.
Availability:	As needed
Results and Interpretations:	Preliminary results (when applicable) and final results are verbally communicated to the sender to ensure correct interpretation. Final reports are provided via fax or e-mail.
Additional Information:	*Burkholderia mallei* is designated as a Tier 1 Select Agent (Select Agent Regulation, 42 CFR, 73, Final Rule). In the event of *Burkholderia mallei* detection, the Special Pathogens Laboratory will assist the sender in the timely submission of the required federal documentation.
Purpose of Test:	To detect *B. mallei* in clinical samples / To confirm referred isolates.
Method:	A variety of sentinel and LRN methods are used to grow, confirm, or rule- out bacterial isolates.
Interfering Substances:	N/A
Comment:	Please call the Special Pathogen Laboratory with any questions or concerns.

Test	BURKHOLDERIA PSEUDOMALLEI
Synonym:	Melioidosis
Lab Section/Phone:	Special Pathogens / Daytime - (803) 896-0777 or Evenings - (803) 767-8118
Days Performed:	As needed
Turnaround Time	7 to 10 days from the time of sample receipt in the laboratory.
Specimen Required:	Clinical Samples and clinical isolates
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	Determined during pre-approval consultation.
Specimen Volume (minimum):	Determined during pre-approval consultation.
Collect:	Determined during pre-approval consultation.
Form:	DHEC 1335; Test Number 520; "Suspect Agent" = *Burkholderia pseudomallei* DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	Specimen must be pre-approved by Special Pathogens Supervisor prior to testing.
Packing and Shipping*:	Special handling criteria apply. Please contact the laboratory for special instructions at 803-896-0777 / 803-767-8118.
Transport Conditions:	Determined during pre-approval consultation.
Specimen Rejection Criteria:	Determined during pre-approval consultation.
Availability:	As needed
Results and Interpretations:	Preliminary (when applicable) and final results are verbally communicated to the sender to ensure correct interpretation. Final reports are provided via fax or e-mail.
Additional Information:	*Burkholderia pseudomallei* is designated as a Tier 1 Select Agent (Select Agent Regulation, 42 CFR, 73, Final Rule). In the event of *Burkholderia pseudomallei* detection, the Special Pathogens Laboratory will assist the sender in the timely submission of the required federal documentation.
Purpose of Test:	To detect *Burkholderia psuedomallei* in clinical samples / To confirm referred isolates
Method:	A variety of sentinel and LRN methods are used to grow, confirm or rule- out bacterial isolates.
Interfering Substances:	N/A
Comment:	Please call the Special Pathogen Laboratory with any questions or concerns.

Test	CADMIUM, LEAD, MERCURY SCREEN IN WHOLE BLOOD
Synonym:	Blood Metals (Cd, Pb, Hg Screen in Whole Blood)
Lab Section/Phone:	Analytical Chemistry, 803-896-0886
Days Performed:	As requested
Turnaround Time:	10 Days
Specimen Required:	1 mL whole blood from venipuncture
Specimen Identification:	Specimen container must be labelled with patient's full name, and a second patient identifier such as DOB, Specimen #, etc. DHEC requisition must be completed in full.
Specimen Volume (optimum):	>1 mL
Specimen Volume (minimum):	500 µL
Collect:	In general, if more than one evacuated tube of blood is to be drawn from an individual, the blood metals tube should be drawn second or later. Draw the blood through a stainless steel needle into a Vacutainer™.
Form:	DHEC 1332, Test #882
Special Instructions:	N/A
Packing and Shipping*:	See Section IV, Transporting and Shipping Infectious Substances.
Transport Conditions:	Store and ship on cold packs at 4°C. Refrigerate specimen at 4°C if shipping is delayed.
Specimen Rejection Criteria:	Clotted blood, insufficient quantity (QNS). For universal rejections, See Section I.
Availability:	Monday - Friday
Results and Interpretations:	For lead, ≥5 µg/dL is considered elevated in children less than 6 years of age. Action levels for blood lead in children and adults print on result reports. There are no established action levels for mercury or cadmium. The CDC recommends using the 95% upper limit from the NHANES study as action levels for mercury and cadmium.
Additional Information:	N/A
Purpose of Test:	Identify exposure to Cadmium, Lead, and Mercury.
Method:	Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
Interfering Substances:	N/A
Comment:	N/A

Test	CAMPYLOBACTER
Synonym:	Organism for ID, Enteric Culture
Lab Section/Phone:	Clinical Microbiology – 803 896-0805
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Isolate or PCR+ stool transport if unable to isolate Campylobacter isolate
Specimen Identification:	Isolates and Specimens must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Organism or Specimen should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	Isolate – send culturette or slant.
Specimen Volume (minimum):	Specimen – send a walnut sized portion of feces or 5-10ml of liquid stool in stool transport. Infant specimens may be collected in a disposable diaper with outside facing in. Ship specimens and isolates on cold packs.
Collect:	Isolate ship on slant or culturette. Stool must be in transport medium.
Form:	DHEC 1335, isolate Organism for ID, Stool Transport Enteric Cx.
Special Instructions:	Store stool preserved in stool transport in refrigerator and ship ALL specimens and Isolates on cold packs to be received at the lab within 48 hours of collection.
Packing and Shipping*:	See Section IV, Transporting and Shipping Infectious Substances. Store stool preserved in stool transport in refrigerator and ship ALL specimens and Isolates on cold packs to be received at the lab within 48 hours of collection.
Transport Conditions:	Transport on cold packs, via state courier when available using specialized insulated shipper designed to ship with cold packs.
Specimen Rejection Criteria:	Quantity insufficient, specimen too old, improper transport media or conditions. For universal rejections, See Section 1.
Availability:	Monday - Friday
Results and Interpretations:	Campylobacter genus and species
Additional Information:	Specimen submission to the Public Health Laboratory (PHL) is required. If laboratory unable to isolate and submit an isolate, ship stool in transport medium, such as Cary Blair and Para-Pak ASAP as the recovery of Campylobacter goes drastically down after 3 days from collection. Store stool in transport in refrigerator, and ship on cold packs using insulated shippers. Isolates should be shipped within 3 business days on cold packs in insulated shippers.
Purpose of Test:	SC Disease Reporting card required submission, Confirm or identify Campylobacter.
Method:	bioMerieux VITEK MS
Interfering Substances:	none
Comment:	**It is very important to keep the specimen in transport cold and shipped cold on ice packs shipped in insulated shipper to arrive at the PHL within 72 hours of collection.**

Test	CAMPYLOBACTER STOOL CULTURE
Synonym:	Enteric Culture
Lab Section/Phone:	Clinical Microbiology – 803 896-0805
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Stool in transport media.
Specimen Identification:	Specimens must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Organism or Specimen should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	Specimen – send a walnut sized portion of feces or 5-10ml of liquid stool in stool transport. Infant specimens may be collected in a disposable diaper with outside facing in. Ship specimens and isolates on cold packs.
Specimen Volume (minimum):	N/A
Collect:	N/A
Form:	DHEC 1335 – Enteric Culture
Special Instructions:	Store stool preserved in stool transport in refrigerator and ship ALL specimens on cold packs using insulated shipper to be received at the lab within 48 hours of collection.
Packing and Shipping*:	Store stool preserved in stool transport in refrigerator and ship ALL specimens on cold packs using insulated shipper to be received at the lab within 48 hours of collection.
Transport Conditions:	Transport on cold packs, via state courier when available using specialized insulated shipper designed to ship with cold packs.
Specimen Rejection Criteria:	Quantity insufficient, specimen too old, improper transport media or conditions. For universal rejections, See Section 1.
Availability:	Monday - Friday
Results and Interpretations:	Campylobacter genus and species
Additional Information:	Specimen submission to the Public Health Laboratory (PHL) is required. If laboratory unable to isolate and submit an isolate, ship stool in transport medium, such as Cary Blair and Para-Pak ASAP as the recovery of Campylobacter goes drastically down after 3 days from collection. Store stool in transport in refrigerator, and ship on cold packs using insulated shippers. Isolates should be shipped within 3 business days on cold packs in insulated shippers.
Purpose of Test:	SC Disease Reporting card required submission, isolate Campylobacter from culture
Method:	bioMerieux VITEK MS
Interfering Substances:	none
Comment:	**Ship cold on cold packs using insulated shippers.**

<table>
<tr><th>Test</th><th>CANDIDA AURIS</th></tr>
<tr><td>Synonym:</td><td>Candida not Candida albicans, Candida unable to speciate</td></tr>
<tr><td>Lab Section/Phone:</td><td>Clinical Microbiology 803-896-0805</td></tr>
<tr><td>Days Performed:</td><td>Monday - Friday</td></tr>
<tr><td>Turnaround Time:</td><td>10 business days</td></tr>
<tr><td>Specimen Required:</td><td>Isolate submission on slant</td></tr>
<tr><td>Specimen Identification:</td><td>Isolates must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Organism Isolate should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.</td></tr>
<tr><td>Specimen Volume (optimum):</td><td>N/A</td></tr>
<tr><td>Specimen Volume (minimum):</td><td>N/A</td></tr>
<tr><td>Collect:</td><td>Isolate of Candida possible auris on slant. See chart below.</td></tr>
<tr><td>Form:</td><td>DHEC 1335 mark Organism for ID</td></tr>
<tr><td>Special Instructions:</td><td>Write on form any testing performed</td></tr>
<tr><td>Packing and Shipping*:</td><td>See Section IV, Transporting and Shipping Infectious Substances</td></tr>
<tr><td>Transport Conditions:</td><td>Store and ship at room temperature (17-25°C) using approved Shipper</td></tr>
<tr><td>Specimen Rejection Criteria:</td><td>Isolate mixed, Isolate not a Candida species requested to be shipped.
<table>
<tr><th>Identification Method</th><th>Isolates to Submit</th></tr>
<tr><td>No identification</td><td>A random subset of isolates</td></tr>
<tr><td>Germ tube only</td><td>Germ tube-negative isolates</td></tr>
<tr><td>Chromagar only</td><td>Isolates that are NOT green or blue (so no C. albicans or C. tropicalis or C. dubliniensis)</td></tr>
<tr><td>API 20C or API 32C</td><td>Isolates that are NOT C. albicans or C. tropicalis or C. dubliniensis</td></tr>
<tr><td>VITEK 2, MicroScan, Phoenix</td><td>Isolates that are NOT C. albicans or C. tropicalis or C. dubliniensis</td></tr>
<tr><td>MALDI-TOF or molecular identification</td><td>Isolates that are NOT C. albicans, C. tropicalis, C. parapsilosis, C. lusitaniae, C. dubliniensis or C. krusei</td></tr>
</table></td></tr>
<tr><td>Availability:</td><td>Monday - Friday</td></tr>
<tr><td>Results and Interpretations:</td><td>Candida species identified</td></tr>
<tr><td>Additional Information:</td><td>N/A</td></tr>
<tr><td>Purpose of Test:</td><td>To identify possible Candida auris, or other rare newly emerging Candida species.</td></tr>
<tr><td>Method:</td><td>bioMerieux VITEK MS</td></tr>
<tr><td>Interfering Substances:</td><td>N/A</td></tr>
<tr><td>Comment:</td><td>N/A</td></tr>
</table>

Test	CHIKUNGUNYA IgM Capture ELISA
Synonym:	Chik IgM Serology
Lab Section/Phone:	Virology & Rabies, 803-896-0819
Days Performed:	N/A
Turnaround Time:	15 days
Specimen Required:	Serum
Specimen Identification:	Patient's full name and patient ID # (or other unique identifier) is required on the specimen and requisition.
Specimen Volume (optimum):	2 mL
Specimen Volume (minimum):	0.5 mL
Collect:	Serum Separator vacuum tube (SST), centrifuged appropriately. (Red top vacuum tubes may be used if the sample is centrifuged and serum is removed from the clot and put into a different container/tube.) Please follow manufacturer's guidelines. See **Specimen Collection: Venipuncture Procedure in Section III** if needed.
Form:	DHEC 1332
Special Instructions:	N/A
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Store at 2-8°C and ship on cold packs.
Specimen Rejection Criteria:	None. See **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	N/A
Results and Interpretations:	N/A
Additional Information:	Positive specimens will be referred to CDC for additional testing.
Purpose of Test:	To detect IgM antibodies for the Chikungunya virus to determine a current infection.
Method:	IgM Capture ELISA (Enzyme-Linked Immunosorbent Assay)
Interfering Substances:	N/A
Comment:	N/A

Test	CHLAMYDIA (CT) DETECTION BY NUCLEIC ACID AMPLIFICATION
Synonym:	Gen-Probe, C. trachomatis Amplified Nucleic Acid Probe, Chlamydia rRNA, CT Aptima
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday-Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	**Swab specimen:** Endocervical, rectal and pharyngeal swab, and/or male urethral Gen-Probe blue-shafted swab in Gen-Probe Aptima Unisex Swab Specimen Collection Kit for Endocervical and Male Urethral Swab Specimens (Blue Label). **Vaginal specimens:** Use the Gen-Probe Aptima Vaginal Swab Specimen Collection kit (Orange label) for collecting vaginal samples. Vaginal samples collected in the Aptima Unisex Swab Collection kit will be disclaimed as not FDA approved for this type of specimen. **Urine specimen:** Patient should not have voided within one hour of collection. Collect first 20-30 ml of the first-catch urine stream into collection cup. Transfer 2 ml of urine into Aptima Urine Specimen Transport tube so that the urine level falls within the two lines on the transport tube labeled: "fill area". (Yellow Label). See **GC/Chlamydia Gen-Probe Collection Procedure, Section III.**
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, or Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	Urine should be collected up to the "fill area" lines. Swab collection kits should contain the adequate amount of transport media for testing.
Specimen Volume (minimum):	Urine should be collected up to the "fill area" lines. Swab collection kits should contain the adequate amount of transport media for testing.
Collect:	See Specimen Requirements and GC/Chlamydia Gen-Probe Collection Procedure
Form:	DHEC 1332, Test – CT only, Test – GC only and CT/GC.
Special Instructions:	Only use Gen-Probe Aptima specimen collection kit (unisex swab, vaginal swab, or urine). Patients under the age of twelve should be tested by culture.
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Store and ship at room temperature or on ice packs. Swab specimens must be tested within 60 days of collection. Urine specimens should be tested within 30 days of collection (urine must be transferred to the Urine Collection Tubes within 24 hours).
Specimen Rejection Criteria:	Specimen with no swab in transport media; white swab in transport media; two swabs in transport media; urine above or below designated black lines on transport tube labeled fill area; swab specimen more than 60 days old, or urine specimen more than 30 days old. For universal rejections, See Section I
Availability:	Monday-Friday
Results and Interpretations:	Positive, Negative, or Indeterminate
Additional Information:	This test is not appropriate in cases of sexual assault or abuse; patients under the age of twelve should be tested by culture. A negative result does not preclude the presence of a CT or GC infection because results are dependent on adequate specimen collection, absence of inhibitors, and sufficient rRNA to be detected. Test results may be affected by improper specimen collection, improper specimen storage, technical error, or specimen mix-up. Therapeutic failure or success cannot be determined with the Aptima Combo 2 Assay since nucleic acid may persist following appropriate antimicrobial therapy.
Purpose of Test:	For the detection of Chlamydia in pharyngeal, rectal, vaginal, cervical, urethral and urine samples.
Method:	Nucleic Acid Amplification Test
Interfering Substances:	N/A
Comment:	N/A

Test	CORYNEBACTERIUM DIPHTHERIAE, CULTURE & ID
Synonym:	C. diphtheriae
Lab Section/Phone:	Clinical Microbiology 803-896-0805
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Isolate on slant, culture upon approval with CDC (Throat swab, NP swab, skin, Clinical material on Loeffler's slant)
Specimen Identification:	Isolates and Specimens must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Organism or Specimen should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	N/A
Form:	DHEC 1335, Organism for ID (referred isolate), Non Enteric culture (CDC approval)
Special Instructions:	Notify Clinical Microbiology Laboratory Section prior to submission; Specimens must be received within 24 hours of collection.
Packing and Shipping*:	See Transporting and Shipping Infectious Substances Instructions, Section IV
Transport Conditions:	Ship room temperature in designated shippers can use state courier if available.
Specimen Rejection Criteria:	Isolate: For universal rejections, see Section I Culture: Specimen must be received within 24 hours of collection unless submitted on Loeffler's medium. Transport swab not used or ampule in transport swab not crushed. For universal rejections, see Section I
Availability:	Monday - Friday
Results and Interpretations:	N/A
Additional Information:	Specimen submission to the Public Health Laboratory (PHL) is required. Ship 3 day reportables within 3 business days.
Purpose of Test:	N/A
Method:	Conventional culture methods, Traditional Biochemicals
Interfering Substances:	N/A
Comment:	N/A

<table>
<tr><th>Test</th><th>COVID-19</th></tr>
<tr><td>Synonym:</td><td>SARS-CoV-2</td></tr>
<tr><td>Lab Section/Phone:</td><td>Virology/Rabies, 803-896-0819</td></tr>
<tr><td>Days Performed:</td><td>7 days/week</td></tr>
<tr><td>Turn a Round time</td><td>24-48 hours</td></tr>
<tr><td>Specimen Required:</td><td>Nasopharyngeal (NP) swab</td></tr>
<tr><td>Specimen Identification:</td><td>Patient's full name and patient ID # (or other unique identifier) is required on the specimen and requisition.</td></tr>
<tr><td>Specimen Volume (optimum):</td><td>NP swab in 2-3 mL of viral transport media.</td></tr>
<tr><td>Specimen Volume (minimum):</td><td>NP swab in 2-3 mL of viral transport media.</td></tr>
<tr><td>Collect:</td><td>Nasopharyngeal (NP) swab. Use only synthetic fiber swabs with plastic shafts. Do not use calcium alginate swabs or swabs with wooden shafts, as they may contain substances that inactivate some viruses and inhibit PCR testing. Place swabs immediately into sterile tubes containing 2-3 mL of viral transport media.</td></tr>
<tr><td>Form:</td><td>DHEC 1335OE</td></tr>
<tr><td>Special Instructions:</td><td>N/A</td></tr>
<tr><td>Packing and Shipping*:</td><td>Store specimens at 2-8°C for up to 72 hours after collection. If a delay in testing or shipping is expected, store specimens at -70°C or below. See Transporting and Shipping Infectious Substances in Section IV if needed.</td></tr>
<tr><td>Transport Conditions:</td><td>If specimens will ship without delay, store specimens at 2-8°C, and ship overnight on ice pack. If a delay in shipping will result in receipt more than 72 hours after collection, store specimens at -70°C or below and ship overnight on dry ice.</td></tr>
<tr><td>Specimen Rejection Criteria:</td><td>See Specimen Rejection & Disclaimer Criteria in Section I.</td></tr>
<tr><td>Availability:</td><td>7 days/week</td></tr>
<tr><td>Results and Interpretations:</td><td>
<table>
<tr><th>Result</th><th>Interpretation</th></tr>
<tr><th colspan="2">CDC 2019-Novel Coronavirus (2019-nCoV) Real Time RT-PCR Diagnostic Panel</th></tr>
<tr><td>Detected</td><td>2019-nCoV detected</td></tr>
<tr><td>Not Detected</td><td>2019-nCov not detected. Consider testing for other respiratory viruses.</td></tr>
<tr><td>Inconclusive</td><td>Inconclusive result. Recollect sample.</td></tr>
<tr><td>Invalid</td><td>Consider collecting a new specimen from the patient.</td></tr>
<tr><th colspan="2">Hologic Panther Fusion SARS-CoV-2 Assay</th></tr>
<tr><td>Detected</td><td>SARS-CoV-2 detected</td></tr>
<tr><td>Not Detected</td><td>SARS-CoV-2 not detected</td></tr>
<tr><td>Invalid</td><td>Recollect sample</td></tr>
<tr><th colspan="2">ThermoFisher COVID-19 Real Time PCR Assay Multiplex, ThermoFisher TaqPath</th></tr>
<tr><td>Detected</td><td>Positive SARS-CoV-2</td></tr>
<tr><td>Not Detected</td><td>SARS-CoV-2 not detected</td></tr>
<tr><td>Inconclusive</td><td>Recollect sample</td></tr>
</table>
</td></tr>
<tr><td>Additional Information:</td><td>Fact Sheets for this emergency use authorized (EUA) assay for patients and providers can be accessed at the following link: https://www.fda.gov/medical-devices/coronavirus-disease-2019-covid-19-emergency-use-authorizations-medical-devices/vitro-diagnostics-euas#individual-molecular</td></tr>
<tr><td>Purpose of Test:</td><td>Qualitative detection of nucleic acid from the 2019-nCoV in upper respiratory specimens (such as nasopharyngeal swabs) collected from individuals who meet 2019-nCoV clinical and/or epidemiological criteria (for example, clinical signs and symptoms associated with 2019-nCoV infection, contact with a probable or confirmed 2019-nCoV case, history of travel to geographic locations where 2019-nCoV cases were detected, or other epidemiologic links for which 2019-nCoV testing may be indicated as part of a public health investigation).</td></tr>
<tr><td>Method:</td><td>• CDC 2019-Novel Coronavirus (2019-nCoV) Real Time RT-PCR Diagnostic Panel
• ThermoFisher COVID-19 Real Time PCR Assay Multiplex, ThermoFisher TaqPath
• Hologic Panther Fusion SARS-CoV-2 Assay</td></tr>
</table>

Interfering Substances:	N/A
Comment:	

Test	**CRE, CRPA, CRAB**
Synonym:	**CRE** = **Carbapenem-resistant Enterobacterial** (former Enterobacteriacea), Ship All, Do Not send duplicates. Only one isolate per patient regardless of source. To include: *E.coli, Enterobacter, Klebsiella, Proteus, Providencia, Serratia, and Morganella. (*With the exceptions of *Serratia* which are both resistant to carbapenems and sensitive to a 3rd generation cephalosporin and *Enterobacter* spp. Which are sensitive to Cefepime. These both represent a different mechanism of resistance than a carbapenemase). Ertapenem non-susceptibility is the most sensitive indicator of carbapenemase production. CRPA = Carbapenem resistant Pseudomonas aeruginosa **Send all non-mucoid *P. aeruginosa* resistant to imipenem, meropenem, or doripenem AND Not Susceptible to cefepime or ceftazidime.** Do not send duplicates. CRAB = **Carbapenem resistant Acinetobacter baumanii complex** Send in all pan resistant *Acinetobacter* spp.
Lab Section/Phone:	Clinical Microbiology 803-896-0805
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Isolate submitted on slant.
Specimen Identification:	Isolates must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Organism Isolate should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	Carbapenem-resistant Enterobacteriaceae and Acinetobacter baumanni from all specimen types are required to be submitted.
Form:	DHEC requisition 1335, Mark CRE/CRPA/CRAB line
Special Instructions:	N/A
Packing and Shipping*:	Store and Ship and room temperature.
Transport Conditions:	May use state shippers and courier for overnight delivery
Specimen Rejection Criteria:	Quantity insufficient, specimen too old, improper transport media or conditions. for universal rejections, See Section I
Availability:	Monday - Friday
Results and Interpretations:	Organism Identification will be confirmed and reported, mCIM test will be set up and reported, all Positive and indeterminant mCIM isolates will have a PCR test performed to identify carbapenemase enzyme, and an AST (antimicrobial sensitivity test) will be performed.
Additional Information:	INCLUDE DRUG SUSCEPTIBILITY PROFILE, Specimen submission to the Public Health Laboratory (PHL) is required. Ship within 3 business days.
Purpose of Test:	N/A
Method:	bioMerieux VITEK MS, mCIM, Cepheid, STRECK kit, KBS, Sensititre
Interfering Substances:	N/A
Comment:	N/A

Test	CRYPTOSPORIDIUM ANTIGEN
Synonym:	Cryptosporidium antigen testing is available for outbreaks as determined by the SC DHEC Division of Acute Disease Epidemiology.
Lab Section/Phone:	Clinical Microbiology 803-896-0805
Days Performed:	Monday - Friday
Turnaround Time:	5 business days
Specimen Required:	Walnut sized portion fresh stool or 3 ml of liquid stool, 10% formalin preserved stool, Cary-Blair, C & S, or concentrated stool sediment. Specimen must be placed in a leakproof container. Do Not use PVA.
Specimen Identification:	Specimen container must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	N/A
Form:	DHEC requisition form 1335, Mark Cryptosporidium Antigen line.
Special Instructions:	N/A
Packing and Shipping*:	Store and ship on ice packs in an insulated shipper.
Transport Conditions:	May use state shippers and courier for overnight delivery
Specimen Rejection Criteria:	**Specimen preserved in PVA**, improper labeling. For universal rejections, see Section I.
Availability:	Monday - Friday
Results and Interpretations:	Negative = Cryptosporidium antigen is absent or below detectable levels. Positive = Cryptosporidium antigen detected.
Additional Information:	N/A
Purpose of Test:	To detect the presence of *Cryptosporidium* oocysts.
Method:	Rapid immunoassay for the qualitative detection of *Cryptosporidium parvum* antigen.
Interfering Substances:	The test is designed for use with stool samples collected in an acceptable transport media. The use of colonic washes, aspirates or other diluted sample types has not been established and could affect the performance of the assay. Stool samples contaminated by products with an oily or particulate base (eg. Barium, mineral oil, etc.) could interfere with the test and are not recommended.
Comment:	N/A

<table>
<tr><th>Test</th><th>DENGUE IgM</th></tr>
<tr><td>Synonym:</td><td>Dengue IgM Serology</td></tr>
<tr><td>Lab Section/Phone:</td><td>Virology & Rabies, 803-896-0819</td></tr>
<tr><td>Days Performed:</td><td>N/A</td></tr>
<tr><td>Turnaround Time:</td><td>15 days</td></tr>
<tr><td>Specimen Required:</td><td>Serum</td></tr>
<tr><td>Specimen Identification:</td><td>Patient’s full name and patient ID # (or other unique identifier) is required on the specimen and requisition.</td></tr>
<tr><td>Specimen Volume (optimum):</td><td>2 mL serum</td></tr>
<tr><td>Specimen Volume (minimum):</td><td>0.5 mL serum</td></tr>
<tr><td>Collect:</td><td>Serum Separator vacuum tube (SST), centrifuged appropriately. (Red top vacuum tubes may be used if the sample is centrifuged and serum is removed from the clot and put into a different container/tube.) Please follow manufacturer’s guidelines. See Specimen Collection: Venipuncture Procedure in Section III if needed.</td></tr>
<tr><td>Form:</td><td>DHEC 1332</td></tr>
<tr><td>Special Instructions:</td><td>Paired specimens are NOT required.</td></tr>
<tr><td>Packing and Shipping*:</td><td>See Transporting and Shipping Infectious Substances in Section IV.</td></tr>
<tr><td>Transport Conditions:</td><td>Store and ship at 2-8°C</td></tr>
<tr><td>Specimen Rejection Criteria:</td><td>See Specimen Rejection & Disclaimer Criteria in Section I.</td></tr>
<tr><td>Availability:</td><td>Weekly</td></tr>
<tr><td>Results and Interpretations:</td><td>
<table>
<tr><th>Result</th><th>Interpretation</th></tr>
<tr><td>Negative</td><td>No detectable IgM antibody, individual does not appear to be infected with Dengue virus. The result does not rule out Dengue virus infection.</td></tr>
<tr><td>Equivocal</td><td>Dengue virus IgM antibody cannot be determined. Submit another sample for testing.</td></tr>
<tr><td>Positive</td><td>Presence of detectable IgM antibody, presumptive infection with Dengue virus. Confirmatory testing to follow. A positive IgM result may not indicate a recent infection because IgM may persist for several months after infection.</td></tr>
</table>
</td></tr>
<tr><td>Additional Information:</td><td>Positive results will be referred to CDC for additional testing.</td></tr>
<tr><td>Purpose of Test:</td><td>To detect IgM antibodies for the Dengue virus to determine a current infection.</td></tr>
<tr><td>Method:</td><td>IgM Capture ELISA (Enzyme-Linked Immunosorbent Assay)</td></tr>
<tr><td>Interfering Substances:</td><td>N/A</td></tr>
<tr><td>Comment:</td><td>N/A</td></tr>
</table>

Test	EBOLA VIRUS REAL-TIME RT-PCR ASSAY (EBOLA)
Synonym:	Zaire ebola virus
Lab Section/Phone:	Special Pathogens / Daytime - (803) 896-0777 or Evenings - (803) 767-8118
Days Performed:	As needed
Turnaround Time:	24 hours
Specimen Required:	Whole blood, serum, and plasma; urine (can not be the sole specimen)
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	Determined during Special Pathogens Laboratory notification.
Specimen Volume (minimum):	Determined during Special Pathogens Laboratory notification.
Collect:	Determined during Special Pathogens Laboratory notification.
Form:	DHEC 1335; Test Number 521; check "Ebola" DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	**Pre-approval Needed - Hospitals must obtain approval from the DHEC health department prior to submitting specimens to the Special pathogens Laboratory. Contact information can be located on the back of the *List of Reportable Conditions*. Contact the Special Pathogens Laboratory (803-896-0777 / 803-767-8118) for test notification, specimen collection, storage conditions, and shipping conditions/methods.**
Packing and Shipping*:	Special handling criteria apply. Please contact the laboratory for special instructions at 803-896-0777 / 803-767-8118.
Transport Conditions:	Determined during Special Pathogens Laboratory notification.
Specimen Rejection Criteria:	Determined during Special Pathogens Laboratory notification.
Availability:	As needed
Results and Interpretations:	- Final results are verbally communicated to the sender to ensure correct interpretation. Final reports are provided via fax or e-mail. - The definitive identification of Ebola virus requires additional testing to be performed by CDC. - Negative EBOV NP rRT-PCR results do not preclude Ebola virus infection and should not be used as the sole basis for patient management decisions.
Additional Information:	Ebola Virus is designated as a Tier 1 Select Agent (Select Agent Regulation, 42 CFR, 73, Final Rule). In the event of *Ebola* detection, the Special Pathogens Laboratory will assist the sender in the timely submission of the required federal documentation.
Purpose of Test:	To presumptively identify Ebola RNA in clinical specimens
Method:	CDC/LRN Real-Time RT-PCR Assay, EUA
Interfering Substances:	N/A
Comment:	Please call the Special Pathogens Laboratory with any questions or concerns.

Test	ENTERIC GI PANEL by FilmArray (PCR)
Synonym:	**Bacteria**: *Campylobacter, Clostridium difficile* toxin A/B, *Plesiomonas shigelloides, Salmonella, Vibrio species, Vibrio cholerae, Yersinia enterocolitica;* **Diarrheagenic *E. coli/Shigella***: *Enteroaggregative E. coli (EAEC), Enteropathogenic E. coli (EPEC), Enterotoxigenic E. coli* (ETEC*) lt/st.* Shiga-like producing *E. coli* (STEC) *stx1/stx2, E. coli* O157, *Shigella/Enteroinvasive E. coli* (EIEC); **Parasites**: *Cyclospora cayetanensis, Crytosporidium, Entamoeba histolytica,* and *Giardia lamblia;* **Viruses**: Adenovirus F 40/41, Astrovirus, and Norovirus GI/GII, Rotavirus A, Sapovirus
Lab Section/Phone:	Virology & Rabies, 803-896-0819
Days Performed:	Monday-Friday
Turnaround Time:	Note: For same day test results, specimen must be received by noon.
Specimen Required:	Stool (walnut sized portion of formed or 5-10 mL of liquid) preserved in Cary Blair media in transport tube. Infant specimens may be collected in a disposable diaper with plastic side facing inside.
Specimen Identification:	Patient's full name and patient ID # (or other unique identifier) is required on the specimen and requisition.
Specimen Volume (optimum):	Walnut sized portion of formed stool or 5-10 mL of liquid stool
Specimen Volume (minimum):	N/A
Collect:	Stool preserved in Cary-Blair media transport tube
Form:	DHEC 1335; Test # 508 **See PARASITE ID test #410**
Special Instructions:	Call Virology Laboratory
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Ship on cold packs
Specimen Rejection Criteria:	Unpreserved stool and specimen preserved in PVA. For universal rejections, see **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	N/A
Results and Interpretations:	N/A
Additional Information:	N/A
Purpose of Test:	To detect the presence of enteric pathogens other than Norovirus in a GI outbreak situation.
Method:	Film Array GI panel (PCR)
Interfering Substances:	N/A
Comment:	N/A

Test	ENTERIC PATHOGENS CULTURE
Synonym:	Fecal culture, stool culture, enteric culture, *Salmonella* culture, *Shigella* culture, *Campylobacter* culture, *Vibrio* culture, toxin culture for *Staphylococcus aureus, Bacillus cereus,* and *Clostridium perfringens.*
Lab Section/Phone:	Clinical Microbiology 803-896-3360
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Walnut sized portion of feces or 5-10 ml of liquid stool in stool transport. Infant specimens may be collected in a disposable diaper with plastic side facing inside.
Specimen Identification:	Specimen container must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	Use stool transport such as Cary Blair or ParaPak
Form:	DHEC requisition 1335, mark Enteric Culture
Special Instructions:	Keep specimen cold
Packing and Shipping*:	Store stool preserved in stool transport in refrigerator and ship ALL specimens on cold packs using insulated shipper to be received at the lab within 48 hours of collection.
Transport Conditions:	May use state shippers and courier for overnight delivery
Specimen Rejection Criteria:	Quantity insufficient; specimen too old; improper transport media or conditions. For universal rejections. See section I.
Availability:	Monday - Friday
Results and Interpretations:	N/A
Additional Information:	N/A
Purpose of Test:	Culture and identification of the following pathogens: *Salmonella, Shigella, Campylobacter, Vibrio,* Shiga-toxin producing *Escherichia coli, Aeromonas, Yersinia enterocolitica, Plesiomonas shigelloides, Staphylococcus aureus, Bacillus cereus, Clostridium perfringens.*
Method:	Traditional culture, conventional biochemicals, serotyping, bioMerieux VITEK MS
Interfering Substances:	Do not use PVA
Comment:	**Enteric Pathogen culture testing is available for outbreaks as determined by the SC DHEC DADE (Division of Acute Disease Epidemiology). Epidemiology to note on requisition slip which pathogens are suspected.**

Test	ENTERIC PATHOGENS submitted by NON-CULTURE INDEPENDENT METHODS (PCR)
Synonym:	Fecal culture, stool culture, enteric culture, *Salmonella* culture, *Shigella* culture, *Campylobacter* culture, *Vibrio* culture, shiga-toxin producing Escherichia coli..
Lab Section/Phone:	Clinical Microbiology 803-896-0805
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Walnut sized portion of feces or 5-10 ml of liquid stool in stool transport. Infant specimens may be collected in a disposable diaper with plastic side facing inside.
Specimen Identification:	Specimen container must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	Note: For same day test results, specimen must be received by noon.
Collect:	Use stool transport such as Cary Blair or ParaPak.
Form:	DHEC requisition 1335, mark Enteric Culture
Special Instructions:	Keep specimen cold
Packing and Shipping*:	Store stool preserved in stool transport in refrigerator and ship ALL specimens on cold packs using insulated shipper to be received at the lab within 48 hours of collection.
Transport Conditions:	May use state shippers and courier for overnight delivery
Specimen Rejection Criteria:	Quantity insufficient; specimen too old; improper transport media or conditions. For universal rejections. See section I.
Availability:	Monday - Friday
Results and Interpretations:	N/A
Additional Information:	Specimen submission to the Public Health Laboratory (PHL) is required. Ship ASAP on cold packs in insulated shipper to improve recovery of PCR+ organism.
Purpose of Test:	Culture and identification of the following pathogens: *Salmonella, Shigella, Campylobacter, Vibrio,* Shiga-toxin producing *Escherichia coli, Aeromonas, Yersinia enterocolitica, Plesiomonas shigelloides.*
Method:	Traditional culture, conventional biochemicals, serotyping, bioMerieux VITEK MS
Interfering Substances:	Do not use PVA
Comment:	**It is very important to keep the specimen cold and shipped to arrive at the PHL within 72 hours of collection.**

Test	ESCHERICIA COLI – SHIGA-TOXIN PRODUCING
Synonym:	*E.coli* O157:H7, *E.coli* non-O157, STEC, EHEC, Shiga toxin positive
Lab Section/Phone:	Clinical Microbiology 803-896-0805
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Isolate, or PCR+ stool transport/ broth if unable to isolate.
Specimen Identification:	Isolate, Broth or Specimen container must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	N/A
Form:	DHEC 1335 Mark Culture/Isolate for Shiga toxin producing E.coli or Broth/specimen for Shiga toxin producing E.coli as appropriate.
Special Instructions:	Keep Broth and Fecal transport cold, ship cold on ice packs in insulated shipper. Isolate store and ship at room temperature.
Packing and Shipping*:	Store stool preserved in stool transport and broth specimens in refrigerator and ship on cold packs using insulated shipper to be received at the lab within 48 hours of collection. Isolate should be sent on slants at room temperature.
Transport Conditions:	May use state shippers and courier for overnight delivery
Specimen Rejection Criteria:	Quantity insufficient; specimen too old; improper transport media or conditions. For universal rejections. See section I.
Availability:	Monday - Friday
Results and Interpretations:	N/A
Additional Information:	Specimen submission to the Public Health Laboratory (PHL) is required. Ship PCR + stool transport specimens and broths ASAP to increase ability to recover isolate. Ship Shiga toxin positive isolates within 3 business days.
Purpose of Test:	Culture as needed and identification of Shiga-toxin producing *E.coli.*
Method:	Immunochromatographic rapid test for shiga-toxin.
Interfering Substances:	N/A
Comment:	N/A

Test	FOODBORNE ILLNESSES (FOOD POISONING)
Days Performed:	Monday- Friday
Special Instructions:	The Food Microbiology section assists in the epidemiological investigation of suspected foodborne illness. A physician with a patient suspected of having a foodborne illness should contact **Food Protection in the county health department.** **The laboratory does not accept samples from patients.**

Test	FRANCISELLA TULARENSIS
Synonym:	Tularemia, rabbit fever, deerfly fever
Lab Section/Phone:	Special Pathogens / Daytime - (803) 896-0777 or Evenings - (803)767-8118
Days Performed:	As needed
Turnaround Time:	7 to 10 days from the time of sample receipt in the laboratory
Specimen Required:	Clinical Samples / isolates
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	Determined during pre-approval consultation
Specimen Volume (minimum):	Determined during pre-approval consultation
Collect:	Determined during pre-approval consultation
Form:	DHEC 1335; Test Number 520; "Suspect Agent" = *F. tularensis* DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	Specimen must be pre-approved by Special Pathogens Supervisor prior to testing.
Packing and Shipping*:	Special handling criteria apply. Please contact the laboratory for special instructions at 803-896-0777 / 803-767-8118.
Transport Conditions:	Determined during pre-approval consultation
Specimen Rejection Criteria:	Determined during pre-approval consultation
Availability:	As needed
Results and Interpretations:	Preliminary (when applicable) and final results are verbally communicated to the sender to ensure correct interpretation. Final reports are provided via fax or e-mail.
Additional Information:	*Francisella tularensis* is designated as a Tier 1 Select Agent (Select Agent Regulation, 42 CFR, 73, Final Rule). In the event of *Francisella tularensis* detection, the Special Pathogens Laboratory will assist the sender in the timely submission of the required federal documentation
Purpose of Test:	To detect *F. tularensis* in clinical samples / To confirm referred isolates
Method:	A variety of sentinel and LRN methods are used to grow, confirm, or rule- out bacterial isolates.
Interfering Substances:	N/A
Comment:	Please call the Special Pathogen Laboratory with any questions or concerns

Test	GIARDIA ANTIGEN
Synonym:	N/A
Lab Section/Phone:	Clinical Microbiology 803-896-0805
Days Performed:	Monday - Friday
Turnaround Time:	5 business days
Specimen Required:	Walnut sized portion fresh stool or 3 ml of liquid stool, 10% formalin preserved stool, Cary-Blair, C & S, or concentrated stool sediment. Specimen must be placed in a leakproof container. Do Not use PVA.
Specimen Identification:	Specimen container must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	N/A
Form:	DHEC requisition form 1335, Mark Cryptosporidium Antigen line.
Special Instructions:	N/A
Packing and Shipping*:	Store and ship on ice packs in an insulated shipper.
Transport Conditions:	May use state shippers and courier for overnight delivery.
Specimen Rejection Criteria:	**Specimen preserved in PVA**, improper labeling. For universal rejections, see **Section I**.
Availability:	Monday - Friday
Results and Interpretations:	Negative = Giardia antigen is absent or below detectable levels. Positive = Giardia antigen detected.
Additional Information:	N/A
Purpose of Test:	To detect the presence of Giardia antigen.
Method:	Rapid immunoassay for the qualitative detection of *Cryptosporidium parvum* antigen.
Interfering Substances:	The test is designed for use with stool samples collected in an acceptable transport media. The use of colonic washes, aspirates or other diluted sample types has not been established and could affect the performance of the assay. Stool samples contaminated by products with an oily or particulate base (eg. Barium, mineral oil, etc.) could interfere with the test and are not recommended.
Comment:	**Giardia antigen testing is available for outbreaks as determined by the SC DHEC Division of Acute Disease Epidemiology (DADE).**

Test	GI OUTBREAK
Synonym:	Norwalk Virus, Norovirus PCR, Enteric Culture, Rotavirus
Lab Section/Phone:	Virology & Rabies, 803-896-0819
Days Performed:	Monday-Friday
Turnaround Time:	N/A
Specimen Required:	Two separate collections are required. 1. For Norovirus Detection by Real-Time PCR, a peanut-sized or tablespoon volume of fresh diarrheal stool. Specimens collected within 48-72 hours of symptom onset are preferred. Specimens collected within 7 days of symptom onset will be accepted. Rectal swabs are not acceptable. Please batch submissions if possible. 2. For Enteric Pathogens Culture, a walnut sized portion of feces or 5-10 ml of liquid stool in stool transport. Infant specimens may be collected in a disposable diaper with plastic side facing inside.
Specimen Identification:	Patient's full name and patient ID # (or other unique identifier) is required on both specimens and requisition.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	1. For Norovirus Detection by Real-Time PCR, a peanut-sized or tablespoon volume of fresh diarrheal stool. 2. For Enteric Pathogens Culture, a walnut sized portion of feces or 5-10 ml of liquid stool in stool transport.
Collect:	1. For stool for Norovirus Detection by Real-Time PCR, use a sterile, screw capped, leak-proof, 50 mL conical tube or urine container. 2. For **Enteric Pathogens Culture**, use transport tube with Cary-Blair medium included in Enteric Kit provided by the Public Health Laboratory
Form:	DHEC 1335; When ordering this test panel, please write GI Outbreak on the submission form.
Special Instructions:	**Use of this test is restricted to Epidemiological investigations. This test should be used when a GI outbreak is suspected and multiple etiologies are suspected. Please contact your Regional Epidemiological contact.**
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Store in refrigerator and ship on cold packs.
Specimen Rejection Criteria:	See **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	N/A
Results and Interpretations:	**Result** / **Interpretation** Detected / Organism detected Not detected / No organism detected
Additional Information:	When ordering this test panel, please write GI Outbreak on the submission form. This panel designates a testing algorithm for GI outbreak of unknown etiology. This panel includes tests for Norovirus rRT-PCR, BioFire FilmArray GI Panel, and enteric culture (in this order). Testing will cease when a positive identification is made. If enteric pathogens other than *Salmonella, E. coli* O157:H7 or *Shigell*a are suspected, please specify.
Purpose of Test:	*GI Outbreak testing is available for outbreaks as determined by the SC DHEC Division of Acute Disease Epidemiology.*
Method:	1. Norovirus: Real-time reverse transcriptase polymerase chain reaction (real-time RT-PCR 2. Enteric Pathogens Culture: Traditional culture, conventional biochemicals, serotyping, bioMerieux VITEK MS
Interfering Substances:	N/A
Comment:	N/A

Test	GONOCOCCAL (GONORRHEA) CULTURE
Synonym:	GC culture, *Neisseria gonorrhoeae* culture
Lab Section/Phone:	Clinical Microbiology 803-896-0805
Days Performed:	Monday - Friday
Turnaround Time:	5 business days
Specimen Required:	Transgrow bottle
Specimen Identification:	Transgrow bottle must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full. **Do Not place label over clear glass viewing area, layer patient label over existing label.**
Specimen Volume (optimum):	See *N. gonorrhoeae* Collection Procedure, Section III
Specimen Volume (minimum):	N/A
Collect:	Bring transgrow bottle to room temperature before inoculating: hold bottle upright and roll swab over entire surface of medium; discard swab. NOTE: Use the state courier for overnight delivery. Do not mail specimens for arrival over a weekend.
Form:	DHEC 1335, Mark GC Culture & ID
Special Instructions:	**Collect specimens Monday thru Wednesday ONLY.**
Packing and Shipping*:	If an incubator is available, incubate inoculated transgrow bottle upright at 35°C until shipped, and indicate incubation time on request form. If an incubator is not available, make sure culture is shipped on the same day as collected. DO NOT REFRIGERATE AFTER INOCULATION. **DO NOT USE EXPIRED MEDIA.**
Transport Conditions:	See Packing and Shipping Instructions, Section IV
Specimen Rejection Criteria:	Transgrow media not used or media expired; specimen in transit more than 5 days. For universal rejections, See Section 1
Availability:	Monday - Wednesday
Results and Interpretations:	*Neisseria gonorrhoeae* isolated or not isolated.
Additional Information:	**If Drug Treatment failure is expected, notate this on DHEC requisition. If *Neisseria gonorrhoeae* is isolated, isolate will be sent out for Antimicrobial Susceptibility Testing (AST).**
Purpose of Test:	Culture for growth of *Neisseria gonorrhoeae,* this is needed if drug treatment failure is expected.
Method:	BioMerieux VITEK MS
Interfering Substances:	N/A
Comment:	N/A

Test	GONOCOCCAL (GC) DETECTION by NUCLEIC ACID AMPLIFICATION
Synonym:	Gen-Probe N. gonorrhoeae Amplified Nucleic Acid Probe, Gonorrhea rRNA, GC Aptima
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday-Friday
Turnaround Time:	1-5 business days
Specimen Required:	**Swab specimen:** Endocervical, validated rectal and pharyngeal swab, or male urethral Gen-Probe blue-shafted swab in Gen-Probe Aptima Unisex Swab Specimen Collection Kit for Endocervical and Male Urethral Swab specimens (Blue label). **Vaginal samples:** Use the Gen-Probe Aptima Vaginal Swab Specimen Collection Kit (Orange label) for collecting vaginal samples. Vaginal samples collected in the Aptima Unisex Swab Collection Kit will be disclaimed as not FDA approved for this type of specimen. **Urine samples:** Patient should not have voided within one hour of collection. Collect first 20-30 ml of the first-catch urine stream into collection cup. Transfer 2 ml of urine into Aptima Urine Specimen Transport tube so that the urine level falls within the two lines on the transport tube labeled: "fill area". (Yellow Label). See **GC/Chlamydia Gen-Probe Collection Procedure, Section III.**
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, or Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	Urine should be collected up to the "fill area" lines. Swab collection kits should contain the adequate amount of transport media for testing.
Specimen Volume (minimum):	Urine should be collected up to the "fill area" lines. Swab collection kits should contain the adequate amount of transport media for testing.
Collect:	Gen-Probe Aptima Unisex transport kit for endocervical and male urethral swabs. GenProbe Aptima Urine specimen transport tubes for urine samples. Gen-Probe Aptima Vaginal Swab Specimen Collection kit for vaginal samples. See **GC/Chlamydia Gen-Probe Collection Procedure, Section III.**
Form:	DHEC 1332
Special Instructions:	Only use Gen-Probe Aptima specimen collection kit (unisex swab, vaginal swab, or urine). Patients under the age of twelve should be tested by culture.
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Store and ship at room temperature or on ice packs. Swab specimens must be tested within 60 days of collection. Urine specimens should be tested within 30 days of collection (urine must be transferred to the Urine Collection Tubes within 24 hours).
Specimen Rejection Criteria:	Specimen with no swab in transport media; white swab in transport media; two swabs in transport media; urine above or below designated black lines on transport tube labeled fill area; swab specimen more than 60 days old, or urine specimen more than 30 days old. For universal rejections, See Section I
Availability:	Monday-Friday
Results and Interpretations:	Positive, Negative, or Indeterminate
Additional Information:	This test is not appropriate in cases of sexual assault or abuse; patients under the age of twelve should be tested by culture. A negative result does not preclude the presence of a CT or GC infection because results are dependent on adequate specimen collection, absence of inhibitors, and sufficient rRNA to be detected. Test results may be affected by improper specimen collection, improper specimen storage, technical error, or specimen mix-up. Therapeutic failure or success cannot be determined with the Aptima Combo 2 Assay since nucleic acid may persist following appropriate antimicrobial therapy.
Purpose of Test:	For the detection of *Neisseria gonorrhoeae* in pharyngeal, rectal, vaginal, cervical, urethral and urine samples.
Method:	Nucleic Acid Amplification Test
Interfering Substances:	N/A
Comment:	N/A

Test	HAEMOPHILUS INFLUENZAE
Synonym:	*H. influenzae*
Lab Section/Phone:	Clinical Microbiology 803-896-0805
Days Performed:	Monday - Friday
Turnaround Time:	5 business days
Specimen Required:	Agar slant that will support growth of isolate
Specimen Identification:	Isolate container must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	Pure bacterial isolate on agar slant (chocolate agar is preferred).
Form:	DHEC requisition form 1335. Mark Organism for ID
Special Instructions:	Inoculate chocolate agar slant with isolated organism, incubate overnight in CO2 incubator, observe for growth, ship isolate at room temperature.
Packing and Shipping*:	See Packing and Shipping Instructions in Section IV. May use state courier for overnight delivery.
Transport Conditions:	Ship ambient temperature may use state courier.
Specimen Rejection Criteria:	Culture non-viable; culture mixed. For universal rejections, See Section I
Availability:	Monday - Friday
Results and Interpretations:	N/A
Additional Information:	Only *H. influenzae* isolates from normally sterile sites, should be tested. Always specify site of isolate. Urgently reportable. Ship within 1 business day.
Purpose of Test:	Confirm identification of *Haemophilus influenzae*, and serotype.
Method:	bioMereiux VITEK MS, serotyping
Interfering Substances:	N/A
Comment:	N/A

Test	HEMOGLOBIN (Hb) ELECTROPHORESIS
Synonym:	Adult Sickle Cell Screen
Lab Section/Phone:	Newborn Screening, 803-896-0874
Days Performed:	Upon Request
Turnaround Time:	5 days
Specimen Required:	Dried blood spot; collected on DHEC 1339 collection form
Specimen Identification:	Patient's full name and date of birth written on DHEC 1339 collection form
Specimen Volume (optimum):	2 filled circles on DHEC 1339 collection form
Specimen Volume (minimum):	1 filled circle on DHEC 1339 collection form
Collect:	Fingerstick
Form:	DHEC 1339
Special Instructions:	Allow specimen to dry horizontally for 4 hours before packing for shipment; to protect the specimen, fold over Biohazard labeled flap once specimen is dry.
Packing and Shipping*:	Place dried and covered specimen in paper/cardboard mailer
Transport Conditions:	Ambient temperature; NO PLASTIC BAGS
Specimen Rejection Criteria:	Specimen received in plastic bag; specimen collected on expired collection form; specimen older than 14 days; specimen quality or quantity inadequate
Availability:	N/A
Results and Interpretations:	N/A
Additional Information:	N/A
Purpose of Test:	Screen for abnormal hemoglobins
Method:	Iso-electric focusing and/or High Performance Liquid Chromatography
Interfering Substances:	N/A
Comment:	N/A

Test	HEPATITIS A SEROLOGY
Synonym:	HAVAB-G; Anti-HAV; HAVAB-IgG; Antibody to Hepatitis HAV-IgG; Anti-HAV, IgG; Antibody to Hepatitis A Virus, IgG; HAVAB-M; HAVAB-IgM; Antibody to HAV-IgM; Anti-HAV, IgM; Antibody to Hepatitis A Virus, IgM
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Upon request
Turnaround Time:	1-5 Business Days
Specimen Required:	Serum
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	1 mL of serum
Specimen Volume (minimum):	0.50 mL of serum
Collect:	Serum-separator tube or serum. (Red top vacuum tubes may only be used if the sample is sent in within 24 hours or centrifuged and serum is removed from the clot and put into a different container/tube.)
Form:	DHEC 1332, Test - Hepatitis A, IgG; Test - Hepatitis A, IgM
Special Instructions:	All Hepatitis A outbreak investigations should be reported to the laboratory supervisor (803-896-0811) or Division Director (803-896-0870) prior to shipment of specimens. After collecting the sample invert the serum-separator tube gently 5 times, allow to clot for at least 30 minutes and centrifuge within 2 hours from the time of collection. Samples must be centrifuged within 2 hours of collection to separate the serum from the clot.
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	It is acceptable to ship specimens for anti-HAV (IgG) and anti-HAV (IgM) tests at ambient temperature, as long as the specimen is received in the lab within 72 hours of collection. If it will be more than 72 hours, store at 2-8°C following specimen collection and ship with an ice pack for up to 6 days. If shipping is delayed more than 6 days, remove the serum from the clot or gel and freeze the serum at -20°C and ship on dry ice. Before shipping specimens, it is recommended that specimens be removed from the clot, red blood cells or separator gel. If the specimen is frozen prior to shipment, please indicate this information on the request form. Anti-HAV (IgG) samples containing low antibody concentrations (near the cutoff) assayed after a freeze thaw may exhibit elevated values that may be false positive.
Specimen Rejection Criteria:	Improperly stored/shipped, heat-inactivated, pooled, grossly hemolyzed or microbial contaminated specimens will be rejected. Specimen greater than 7 days old when received, unless the serum was frozen and shipped on dry ice, will be rejected. Please indicate if the specimen was frozen on the requisition form. Specimen shipped in ambient conditions that are greater than 3 days old when received, will not be tested and will be rejected, unless the sample was refrigerated and received on a cold pack. A second specimen will need to be collected if any samples are rejected. For universal rejections, see Section I.
Availability:	Testing performed as needed.
Results and Interpretations:	Reactive or Nonreactive
Additional Information:	N/A
Purpose of Test:	For the detection of Hepatitis A in serological samples
Method:	Chemiluminescence (CMIA)
Interfering Substances:	N/A
Comment:	N/A

Test	HEPATITIS B CORE IgM ANTIBODY
Synonym:	Anti-HBc, IgM; HBcAb,IgM; Antibody to Hepatitis B Core Antigen, IgM
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Available upon request.
Turnaround Time:	1-5 Days
Specimen Required:	Serum
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	0.50 mL of serum
Specimen Volume (minimum):	0.25 mL of serum
Collect:	Serum-separator tube or serum. (Red top vacuum tubes may only be used if the sample is sent in within 24 hours or centrifuged and serum is removed from the clot and put into a different container/tube.)
Form:	DHEC 1332
Special Instructions:	N/A
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	It is acceptable to ship specimens at ambient temperature as long as the specimen is received in the lab within 3 days of collection. If it will be more than 3 days, store at 2 to 8˚C following specimen collection and ship with an ice pack. If shipping is delayed more than 7 days, remove the serum from the clot or gel and freeze the serum at -20° C and ship on dry ice. Before shipping specimens, it is recommended that specimens be removed from the clot, red blood cells, or separator gel. If you have frozen the specimen prior to shipment, please indicate this information on the request form. Shipping Description: See Packing and
Specimen Rejection Criteria:	Improperly stored/shipped, heat-inactivated, pooled, grossly hemolyzed or microbial contaminated specimens will be rejected. Specimen greater than 6 days old when received, unless the serum was frozen and shipped on dry ice, will be rejected. Please indicate if the specimen was frozen on the requisition form. Specimen shipped in ambient conditions that are greater than 24 hours old when received, will not be tested and will be rejected, unless the sample was refrigerated and received on a cold pack. A second specimen will need to be collected if any samples are rejected. For universal rejections, see Section I.
Availability:	As needed
Results and Interpretations:	Reactive or Nonreactive
Additional Information:	*Test automatically performed on patients with reactive anti-HBc total antibody in absence of reactive HBsAg or anti-HBs on Diagnostic Profile (test #223) and test automatically performed on patients with reactive Hepatitis B surface antigen on Diagnostic Test Panel #223* must arrive at lab within 6 days of collection. If shipping is delayed more than 6 days, freeze serum and ship on dry ice. NOTE: If you have frozen the specimen prior to shipment, please indicate that you have done so on the request form.
Purpose of Test:	N/A
Method:	Chemiluminescence
Interfering Substances:	N/A
Comment:	N/A

Test	HEPATITIS B CORE TOTAL ANTIBODY SCREEN
Synonym:	Anti-HBc; Core Antibody; HBcAb, Total; Antibody to Hepatitis B Core Antigen
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday - Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	Serum
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	1.0 mL of Serum
Specimen Volume (minimum):	0.5 mL of Serum
Collect:	Serum-separator tube or serum. (Red top vacuum tubes may only be used if the sample is sent in within 24 hours or centrifuged and serum is removed from the clot and put into a different container/tube.)
Form:	DHEC 1332, Test #226
Special Instructions:	After collecting the sample invert the serum-separator tube gently 5 times, allow to clot for at least 30 minutes and centrifuge within 2 hours from the time of collection. Samples must be centrifuged within 2 hours of collection to separate the serum from the clot. See Venipuncture Procedure, Section III, if needed.
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	EXCLUDING HBsAG, it is acceptable to ship specimens at ambient temperature as long as the specimen is received in the lab within 3 days of collection. If it will be more than 3 days, store at 2 to 8˚C following specimen collection and ship with an ice pack. If shipping is delayed more than 7 days, remove the serum from the clot or gel and freeze the serum at -20° C and ship on dry ice. Before shipping specimens, it is recommended that specimens be removed from the clot, red blood cells, or separator gel. If you have frozen the specimen prior to shipment, please indicate this information on the request form.
Specimen Rejection Criteria:	Improperly stored/shipped, heat-inactivated, pooled, grossly hemolyzed or microbial contaminated specimens will be rejected. Specimen greater than 7 days old when received, unless the serum was frozen and shipped on dry ice will be rejected. Please indicate if the specimen was frozen on the requisition form. Specimen shipped in ambient conditions that are greater than 3 days old when received, will not be tested and will be rejected, unless the sample was refrigerated and received on a cold pack. A second specimen will need to be collected if any samples are rejected. For universal rejections, see Section I.
Availability:	As needed
Results and Interpretations:	Reactive or Nonreactive
Additional Information:	N/A
Purpose of Test:	N/A
Method:	Chemiluminescence
Interfering Substances:	N/A
Comment:	N/A

Test	HEPATITIS B DIAGNOSTIC PROFILE
Synonym:	Includes tests for HBsAg, anti-HBs, and anti-HBc, and anti-core IgM are performed if indicated.
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday-Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	Serum
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	2 mL of serum
Specimen Volume (minimum):	2 mL of serum
Collect:	Serum-separator tube or serum. (Red top vacuum tubes may only be used if the sample is sent in within 24 hours or centrifuged and serum is removed from the clot and put into a different container/tube.) Please follow manufacturer's guidelines.
Form:	DHEC 1332
Special Instructions:	After collecting the sample invert the serum-separator tube gently 5 times, allow to clot for at least 30 minutes and centrifuge within 2 hours of collection. Samples must be centrifuged within 2 hours of collection to separate the serum from the clot. See Venipuncture Procedure, Section III, if needed.
Packing and Shipping*:	Must be shipped on ice. See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Store **refrigerated** (2- 8°C) and ship on ice. Specimen must arrive at lab cold and within 6 days of collection. If shipping is delayed more than 6 days, freeze serum and ship on dry ice. NOTE: If you have frozen the specimen prior to shipment, please note that you have done so on the request form.
Specimen Rejection Criteria:	"Specimens submitted for HBsAg MUST be shipped on an ice pack." Improperly stored/shipped, heat-inactivated, pooled, grossly hemolyzed or microbial contaminated specimens will be rejected. Specimen greater than 6 days old when received, unless the serum was frozen and shipped on dry ice, will be rejected. Please indicate if the specimen was frozen on the requisition form. Specimen shipped in ambient conditions will not be tested and will be rejected, samples must be refrigerated and received on a cold pack. A second specimen will need to be collected if any samples are rejected. For universal rejections, see Section I.
Availability:	As needed
Results and Interpretations:	N/A
Additional Information:	Includes tests for HBsAg, anti-HBs, and anti-HBc, and anti-core IgM are performed if indicated.
Purpose of Test:	N/A
Method:	N/A
Interfering Substances:	N/A
Comment:	N/A

Test	HEPATITIS B IMMUNE STATUS/POST-IMMUNIZATION
Synonym:	Anti-HBs and Anti-HBc
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday - Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	Serum
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	1.5 mL of Serum
Specimen Volume (minimum):	1 mL of Serum
Collect:	Serum-separator tube or serum. (Red top vacuum tubes may only be used if the sample is sent in within 24 hours or centrifuged and serum is removed from the clot and put into a different container/tube.) See Venipuncture Procedure, Section III, if needed.
Form:	DHEC 1332
Special Instructions:	Tests includes Anti-HBs and Anti-HBc
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	It is acceptable to ship specimens at ambient temperature as long as the specimen is received in the lab within 3 days of collection. If it will be more than 3 days, store at 2 to 8˚C following specimen collection and ship with an ice pack. If shipping is delayed more than 7 days, remove the serum from the clot or gel and freeze the serum at -20° C and ship on dry ice. Before shipping specimens, it is recommended that specimens be removed from the clot, red blood cells, or separator gel. If you have frozen the specimen prior to shipment, please indicate this information on the request form.
Specimen Rejection Criteria:	Improperly stored/shipped, heat-inactivated, pooled, grossly hemolyzed or microbial contaminated specimens will be rejected. Specimen greater than 6 days old when received, unless the serum was frozen and shipped on dry ice, will be rejected. Please indicate if the specimen was frozen on the requisition form. Specimen shipped in ambient conditions that are greater than 24 hours old when received, will not be tested and will be rejected, unless the sample was refrigerated and received on a cold pack. A second specimen will need to be collected if any samples are rejected. For universal rejections, see Section I.
Availability:	As needed
Results and Interpretations:	N/A
Additional Information:	N/A
Purpose of Test:	N/A
Method:	Chemiluminescence
Interfering Substances:	N/A
Comment:	N/A

Test	HEPATITIS B SURFACE ANTIBODY
Synonym:	HBsAb; Anti-HBs; Antibody to Hepatitis B Surface Antigen
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday-Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	Serum
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	1.5 mL of serum
Specimen Volume (minimum):	1 mL of serum
Collect:	Serum-separator tube or serum. (Red top vacuum tubes may only be used if the sample is sent in within 24 hours or centrifuged and serum is removed from the clot and put into a different container/tube.) See Venipuncture Procedure, Section III, if needed.
Form:	DHEC 1332
Special Instructions:	N/A
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	It is acceptable to ship specimens at ambient temperature as long as the specimen is received in the lab within 3 days of collection. If it will be more than 3 days, store at 2 to 8˚C following specimen collection and ship with an ice pack. If shipping is delayed more than 7 days, remove the serum from the clot or gel and freeze the serum at -20° C and ship on dry ice. Before shipping specimens, it is recommended that specimens be removed from the clot, red blood cells, or separator gel. If you have frozen the specimen prior to shipment, please indicate this information on the request form.
Specimen Rejection Criteria:	Improperly stored/shipped, heat-inactivated, pooled, grossly hemolyzed or microbial contaminated specimens will be rejected. Specimen greater than 6 days old when received, unless the serum was frozen and shipped on dry ice, will be rejected. Please indicate if the specimen was frozen on the requisition form. Specimen shipped in ambient conditions that are greater than 24 hours old when received, will not be tested and will be rejected, unless the sample was refrigerated and received on a cold pack. A second specimen will need to be collected if any samples are rejected. For universal rejections, see Section I.
Availability:	Monday-Friday
Results and Interpretations:	N/A
Additional Information:	N/A
Purpose of Test:	N/A
Method:	Chemiluminescence (CMIA)
Interfering Substances:	N/A
Comment:	N/A

Test	HEPATITIS B SURFACE ANTIGEN
Synonym:	HBsAg; Hepatitis-Associated Antigen
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday-Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	Serum
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	1.5 mL of serum
Specimen Volume (minimum):	1 mL of serum
Collect:	Serum-separator tube or serum. (Red top vacuum tubes may only be used if the sample is sent in within 24 hours or centrifuged and serum is removed from the clot and put into a different container/tube.) See Venipuncture Procedure, Section III, if needed.
Form:	DHEC 1332
Special Instructions:	N/A
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Store refrigerated (2° - 8°C) and ship on ice. Specimen must arrive at lab within 6 days of collection. If shipping is delayed more than 6 days, freeze serum and ship on dry ice. NOTE: If you have frozen the specimen prior to shipment, please note that you have done so on the request form.
Specimen Rejection Criteria:	"Specimens submitted for HBsAg MUST be shipped on ice pack." Improperly stored/shipped, heat-inactivated, pooled, grossly hemolyzed or microbial contaminated specimens will be rejected. Specimen greater than 6 days old when received, unless the serum was frozen and shipped on dry ice, will be rejected. Please indicate if the specimen was frozen on the requisition form. Specimen shipped in ambient conditions will not be tested and will be rejected, unless the sample was refrigerated and received on a cold pack. A second specimen will need to be collected if any samples are rejected. For universal rejections, see Section I.
Availability:	Monday-Friday
Results and Interpretations:	N/A
Additional Information:	N/A
Purpose of Test:	N/A
Method:	Chemiluminescence
Interfering Substances:	N/A
Comment:	N/A

Test	HEPATITIS C TOTAL ANTIBODY
Synonym:	Antibody to Hepatitis C Virus; Anti-HCV
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday-Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	Serum
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	3 mL of serum
Specimen Volume (minimum):	0.25 ml of serum (if reactive, a total of 2.25 ml serum needs to be collected and sent for confirmatory testing)
Collect:	Serum-separator tube or serum. (Red top vacuum tubes may only be used if the sample is sent in within 24 hours or centrifuged and serum is removed from the clot and put into a different container/tube.) See Blood Collection Procedure for HCV, Section III
Form:	DHEC 1332
Special Instructions:	For sites requesting HCV RNA if total antibody reactive by EIA, collect blood in a serum separator tube, spin down within 2 hours of collection, and ship cold with cold packs to arrive within 24 hours of collection. If sample cannot be shipped within 24 hours, store refrigerated and ship within 5 days. Sample must arrive with a requisition stating it was kept refrigerated. Label outside II-26 Revised 1/2020 HEPATITIS C, TOTAL ANTIBODY (Continued) of box HCV Viral Load with indelible marker or sticker that cannot easily be removed. Viral loads can be shipped with any STD sample, but MUST have an ice pack in the biohazard bag with the tube. The sample MUST stay cold at all times during transport.
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	It is acceptable to ship specimens ambient as long as the specimen is received in the lab within 3 days of collection and if viral load testing is not required. (It is better to follow the HCV RNA guideline for storage in case a sample is reactive so that it can be confirmed.) If it will be more than 3 days, store at 2 to 8˚C following specimen collection and ship with an ice pack. If shipping is delayed more than 7 days, remove the serum from the clot or gel and freeze the serum at -20° C and ship on dry ice. If you have frozen the specimen prior to shipment, please indicate this information on the request form.
Specimen Rejection Criteria:	Improperly stored/shipped, heat-inactivated, pooled, grossly hemolyzed or microbial contaminated specimens will be rejected. (Test #224 only) Specimen received greater than 7 days old, unless the serum was frozen and shipped on dry ice will be rejected. Please indicate if the specimen was frozen on the requisition form. Specimen shipped in ambient conditions that are greater than 3 days old when received, will not be tested and will be rejected, unless the sample was refrigerated and received on a cold pack. A second specimen will need to be collected if any samples are rejected. For universal rejections, see Section I.
Availability:	Monday-Friday
Results and Interpretations:	Reactive Confirmed, Reactive Not Confirmed, Nonreactive, Equivocal Confirmed, or Equivocal Not confirmed
Additional Information:	Reactive samples that were shipped/collected appropriately (in an SST, centrifuged, and shipped on cold packs) will be reflexed to viral load testing automatically.
Purpose of Test:	N/A
Method:	Chemiluminescence (CMIA)
Interfering Substances:	N/A
Comment:	Positive HCV Total Antibody results will be confirmed using the HCV Viral Load test as long as the Special Instructions listed above are followed.

Test	HEPATITIS C QUANTITATION BY PCR (RNA)
Synonym:	HCV Viral Load test
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday-Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	Serum
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	3 mL of serum
Specimen Volume (minimum):	1 mL of serum
Collect:	Serum separator tube
Form:	DHEC 1332
Special Instructions:	Collect blood in a serum separator tube, allow to clot for at least 30 minutes, spin down within 2 hours of collection, and ship cold with cold packs to arrive within 5 days of collection (please send in as soon as possible even though sample is viable for a longer period of time). The sample MUST BE kept refrigerated at all times. Label outside of box HCV Viral Load with indelible marker or sticker that cannot easily be removed. Viral loads can be shipped with any STD sample, but MUST have an ice pack in the biohazard bag with the tube. The sample MUST stay cold at all times during transport.
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	The sample must be centrifuged and shipped with an ice pack in the biohazard bag with the tube.
Specimen Rejection Criteria:	Serum separator tube not used or the sample is not cold upon arrival.
Availability:	Monday-Friday
Results and Interpretations:	The measurable reportable range for this procedure is 10-10,000,000 IU/mL and 1.00-7.0 log 10; Specimens testing within this range will be reported as the measured IU/mL value and the log 10 value of the measured IU/mL value e.g. 30,000 IU/mL and 4.48 log 10. Specimens testing above 10,000,000 will be reported as > 10,000,000 IU/ mL and >7.0 log 10. Specimens testing less than 10 IU/mL and less than 1.00 log 10 will be reported as less than < 10 IU/mL as and less than < 1.00 log 10. Specimens with Not Detected will be reported as Not Detected.
Additional Information:	N/A
Purpose of Test:	Used to aid in the detection and quantitation of HCV infections
Method:	Nucleic acid amplification test (RT-TMA)
Interfering Substances:	N/A
Comment:	N/A

<table>
<tr><th>Test</th><th>HERPES SIMPLEX 1 & 2 Assay</th></tr>
<tr><td>Synonym:</td><td>N/A</td></tr>
<tr><td>Lab Section/Phone:</td><td>Virology & Rabies, 803-896-0819</td></tr>
<tr><td>Days Performed:</td><td>Monday-Friday</td></tr>
<tr><td>Turnaround Time:</td><td>5 days</td></tr>
<tr><td>Specimen Required:</td><td>Swab specimens from anogenital lesions ONLY, placed in Viral Transport Media.</td></tr>
<tr><td>Specimen Identification:</td><td>Patient's full name and patient ID # (or other unique identifier) is required on the specimen and requisition.</td></tr>
<tr><td>Specimen Volume (optimum):</td><td>N/A</td></tr>
<tr><td>Specimen Volume (minimum):</td><td>N/A</td></tr>
<tr><td>Collect:</td><td>Polyester-tipped swab specimens from anogenital lesions ONLY placed in Viral Transport Media (available upon request; Ordering Supplies in Section IV, p.1)</td></tr>
<tr><td>Form:</td><td>DHEC 1335</td></tr>
<tr><td>Special Instructions:</td><td>See Viral Media Collection for Virology Samples in Section III, p.40.</td></tr>
<tr><td>Packing and Shipping*:</td><td>See Transporting and Shipping Infectious Substances in Section IV.</td></tr>
<tr><td>Transport Conditions:</td><td>Store in refrigerator and ship on cold packs within 72 hours of collection, or ship frozen if specimen will be received more than 72 hours after collection.</td></tr>
<tr><td>Specimen Rejection Criteria:</td><td>Swabs with cotton tips, calcium alginate tips, or wooden shafts. See Specimen Rejection & Disclaimer Criteria in Section I.</td></tr>
<tr><td>Availability:</td><td></td></tr>
<tr><td>Results and Interpretations:</td><td>
<table>
<tr><th>HSV-1 Result</th><th>HSV-2 Result</th><th>Interpretation</th></tr>
<tr><td>HSV-1 neg</td><td>HSV-2 neg</td><td>Negative: No HSV-1 or HSV-2 mRNA detected</td></tr>
<tr><td>HSV-1 neg</td><td>HSV-2 pos</td><td>HSV-2 positive: HSV-2 mRNA detected</td></tr>
<tr><td>HSV-1 pos</td><td>HSV-2 neg</td><td>HSV-1 positive: HSV-1 mRNA detected</td></tr>
<tr><td>HSV-1 pos</td><td>HSV-2 pos</td><td>HSV-1 and HSV-2 positive: HSV-1 and HSV-2 mRNA detected</td></tr>
</table>
</td></tr>
<tr><td>Additional Information:</td><td>Please do NOT mark "wound, pus, drainage" or write "lesion", but rather specify "Genital" as the specimen or include where the lesion is located in the anogenital region.</td></tr>
<tr><td>Purpose of Test:</td><td>Qualitative detection and differentiation of messenger RNA (mRNA) form Herpes simplex virus type1 (HSV-1) and type 2 (HSV-2) DNA.</td></tr>
<tr><td>Method:</td><td>Nucleic Acid Amplification Test (NAAT) using real-time transcription-mediated amplification (TMA)</td></tr>
<tr><td>Interfering Substances:</td><td>N/A</td></tr>
<tr><td>Comment:</td><td>N/A</td></tr>
</table>

Test	HIV-1 PCR QUANTITATIVE (RNA)
Synonym:	HIV-1 Viral Load test
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday-Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	Minimum 2.0 mL EDTA anticoagulated plasma, See Venipuncture Procedure, Section III, if needed. If using EDTA vacutainer, separate the plasma from the packed cells within 2 hours of collection by centrifugation for 20 minutes at room temperature. Remove the plasma from the cells using a sterile transfer pipette to a sterile polypropylene transport tube. Note: Remove as much of the plasma from the cells as possible without aspirating cells The assay requires 1.0 ml of plasma. The PPT separator tube can be shipped after centrifugation without transferring plasma to another tube. Invert tube after centrifugation to insure complete separation of cells from plasma. If cells present in plasma, re-centrifuge before shipping.
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	2.0 mL of plasma
Specimen Volume (minimum):	1.0 mL of plasma
Collect:	PPT vacutainer (supplied by the Public Health Laboratory call 803-896-0913 to order) or polypropylene tube to which plasma cells have been transferred from the Lavender top (EDTA) vacuum tube or K2 EDTA with gel separator.
Form:	DHEC 1332
Special Instructions:	The sample MUST BE kept refrigerated at all times. Label outside of container as HIV (VIRAL LOAD). Make sure label will not come off.
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Transport on cold packs in a container with return mailing address and the word HIV-1 printed on the outside of the container; use enough cold packs to maintain a temperature between 2°-8 °C during transport. Specimen must arrive at the Laboratory within 3 days after collection. If it will be more than 3 days, transfer plasma into a secondary container and freeze the plasma. Please check with laboratory during a holiday to ensure that it will arrive within 3 days or inform them that the sample was frozen and shipped on dry ice. If stored refrigerated, please indicate this on the requisition or the sample will be rejected if over the 24 hour mark. Viral loads can be shipped with any STD sample, but MUST have an ice pack in the biohazard bag with the tube. The sample MUST stay cold at all times during transport.
Specimen Rejection Criteria:	Whole clotted blood, sample received after 3 days not frozen or not cold, and sample not separated upon arrival. For universal rejections, See Section I
Availability:	
Results and Interpretations:	The measurable reportable range for this procedure is 30-10,000,000 copies/ml and 1.47-7.0 log 10; Specimens testing within this range will be reported as the measured copy value and the log 10 value of the measured copy value e.g. 30,000 copies/mL and 4.48 log 10. Specimens testing above 10,000,000 will be reported as > 10,000,000 copies/ ml and >7.0 log 10. Specimens testing less than < 30 copies/ml and less than < 1.47 log 10 will be reported as less than < 30 copies/ml and less than <1.47 log 10. Specimens with Not Detected will be reported as Not Detected.
Additional Information:	N/A
Purpose of Test:	Therapeutic monitoring of HIV infection
Method:	Nucleic acid amplification test
Interfering Substances:	N/A
Comment:	N/A

Test	HIV-1/HIV-2 SEROLOGY
Synonym:	HIV-1/HIV-2 antibody, HIV-1, HIV-2 antibodies, HIV-1 antigen
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday - Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	Serum
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	1.5 mL of serum
Specimen Volume (minimum):	1 mL of serum
Collect:	Serum-separator tube or serum. (Red top vacuum tubes may only be used if the sample is sent in within 24 hours or centrifuged and serum is removed from the clot and put into a different container/tube.) See Venipuncture procedure Section III, if needed.
Form:	DHEC 1332
Special Instructions:	N/A
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	It is acceptable to ship specimens for HIV-1/HIV-2 antibody screening tests at ambient temperature as long as the specimen is received to the lab within 2 days of collection. If more than 2 days, store at 2 to 8˚C following specimen collection and ship with an ice pack. If shipping is delayed more than 7 days, remove the serum from the clot or gel and freeze the serum at -20° C and ship on dry ice.
Specimen Rejection Criteria:	Specimen greater than 7 days old when received, unless the serum was frozen and shipped on dry ice. Please indicate if the specimen was frozen on the requisition form. Specimen shipped in ambient conditions that are greater than 2 days old when received, will not be tested and will be rejected, unless the sample was refrigerated and received on a cold pack. A second specimen will need to be collected if any samples are rejected. For universal rejections, see Section I.
Availability:	Monday-Friday
Results and Interpretations:	N/A
Additional Information:	Repeat reactive specimens are confirmed by Geenius HIV 1 /2; Recommend repeat testing on all first-time positive patient results including CD4 and Viral load (HIV-1 RNA)
Purpose of Test:	To aid in the detection and diagnosis of HIV-1/HIV-2
Method:	Chemiluminescent Microparticle Immunoassay (CMIA) for HIV Ag/Ab
Interfering Substances:	N/A
Comment:	N/A

Test	INFLUENZA A: H5N1 (ASIAN CLADE)
Synonym:	Avian Flu/ Bird Flu
Lab Section/Phone:	Special Pathogens / Daytime - (8030 896-0777 or Evening - (803) 767-8118
Days Performed:	As needed
Turnaround Time:	48 Hours
Specimen Required:	Throat swabs, Nasal washings/aspirates, nasopharyngeal swabs, sputum, bronchoalveolar lavage, tracheal aspirates, and bronchial washings.
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	Determined during Special Pathogen notification.
Specimen Volume (minimum):	Determined during Special Pathogen notification.
Collect:	Determined during Special Pathogen notification.
Form:	DHEC 1335; Test Number 521; check "Influenza A: H5/H7" DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	**Pre-approval Needed - Hospitals must obtain approval from the DHEC health department prior to submitting specimens to the Special pathogens Laboratory. Contact information can be located on the back of the *List of Reportable Conditions*. Contact the Special Pathogens Laboratory (803-896-0777 / 803-767-8118) for test notification, specimen collection, storage conditions, and shipping conditions/methods.**
Packing and Shipping*:	Special handling criteria apply. Please contact the laboratory for special instructions at 803-896-0777 / 803-767-8118.
Transport Conditions:	Determined during Special Pathogen notification.
Specimen Rejection Criteria:	Determined during Special Pathogen notification.
Availability:	As needed
Results and Interpretations:	- Final results are verbally communicated to sender to ensure correct interpretation. Final reports are provided via fax or e-mail. - The definitive identification of *Influenza A*:H5N1 virus requires additional testing to be performed by CDC.
Additional Information:	Testing for Influenza A: H5N1 will be concurrent with Influenza A:H7N9 testing
Purpose of Test:	To presumptively detect *Influenza A*:H5N1 RNA in clinical samples
Method:	CDC Real Time RT-PCR Assay, EUA
Interfering Substances:	N/A
Comment:	Please call the Special Pathogens Laboratory with any questions or concerns.

Test	INFLUENZA A: H7N9 (EURASIAN LINEAGE)
Synonym:	Avian Flu / Bird Flu
Lab Section/Phone:	Special Pathogens / Daytime - (803) 896-0777 or Evenings - (803) 767-8118
Days Performed:	As needed
Turnaround Time:	48 hours
Specimen Required:	Throat swabs, Nasal washings / aspirates, nasopharyngeal swabs, sputum, bronchoalveolar lavage, tracheal aspirates, and bronchial washings.
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	Determined during Special Pathogen notification.
Specimen Volume (minimum):	Determined during Special Pathogen notification.
Collect:	Determined during Special Pathogen notification.
Form:	DHEC 1335; Test Number 521; check "Influenza A: H5/H7" DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	**Pre-approval Needed - Hospitals must obtain approval from the DHEC health department prior to submitting specimens to the Special pathogens Laboratory. Contact information can be located on the back of the *List of Reportable Conditions*. Contact the Special Pathogens Laboratory (803-896-0777 / 803-767-8118) for test notification, specimen collection, storage conditions, and shipping conditions / methods.**
Packing and Shipping*:	Special handling criteria apply. Please contact the laboratory for special instructions at 803-896-0777 / 803-767-8118.
Transport Conditions:	Determined during Special Pathogen notification.
Specimen Rejection Criteria:	Determined during Special Pathogen notification.
Availability:	As needed
Results and Interpretations:	- Final results are verbally communicated to sender to ensure correct interpretation. Final reports are provided via fax or e-mail. - The definitive identification of *Influenza A:H7N9* virus requires additional testing to be performed by CDC.
Additional Information:	Testing for *Influenza A: H5N1* will be concurrent with *Influenza A:H7N9* testing
Purpose of Test:	To presumptively detect *Influenza A*:H7 RNA in clinical samples
Method:	CDC Real Time RT-PCR Assay EUA
Interfering Substances:	N/A
Comment:	Please call the Special Pathogens Laboratory with any questions or concerns

Test	INFLUENZA DETECTION BY REAL-TIME (RT) PCR
Synonym:	Influenza Surveillance, Influenza Isolation, Influenza Detection
Lab Section/Phone:	Virology & Rabies, 803-896-0819
Days Performed:	Monday-Friday
Turnaround Time:	15 days
Specimen Required:	Nasopharyngeal swab (NP), nasal aspirate (NA), nasal wash (NW), dual nasopharyngeal/throat swab (NP/TS), bronchoalveolar lavage (BAL), bronchial wash (BW), tracheal aspirate (TA), and sputum (SPT) placed in 2-3 mL viral transport media.
Specimen Identification:	Patient's full name and patient ID # (or other unique identifier) is required on the specimen and requisition.
Specimen Volume (optimum):	Swab specimen (see above) placed in 2-3 mL viral transport media.
Specimen Volume (minimum):	N/A
Collect:	Screw-capped tube of viral transport media.
Form:	DHEC 1335
Special Instructions:	Year round, the Public Health Laboratory (PHL) participates in the World Health Organization's (WHO) Influenza Surveillance Program. Collection kits are provided. Please contact the Virology laboratory for more information at 803-896-0819/803-896-0820. If Influenza A/H5N1, A H7, or a newly emerging, highly pathogenic human Influenza strain is suspected, please contact your regional public health office for consultation. Contact information for the regional public health offices is located on the back of the South Carolina List of Reportable Diseases. Upon testing approval, please contact the DHEC PHL at 803-896-0777 or 803-767-8118 for specimen collection, storage and transportation. Testing for A/H5N1, A/H7, and for newly emerging highly pathogenic influenza strains is provided n the Special Pathogens Laboratory.
Packing and Shipping*:	Send to the attention of Virology & Rabies Laboratory. See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Store in refrigerator (2-8°C) and ship with cold packs within 72 hours of collection, or if longer, freeze samples at -70° before shipping.
Specimen Rejection Criteria:	Specimens received on calcium alginate swabs, cotton swabs, or swabs with wooden shafts. See **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	N/A
Results and Interpretations:	N/A
Additional Information:	Influenza testing also includes a full respiratory viral panel to identify other respiratory viral pathogens.
Purpose of Test:	N/A
Method:	Real-time reverse transcription polymerase chain reaction (real-time RT-PCR)
Interfering Substances:	N/A
Comment:	N/A

Test	LEAD ANALYSIS, BLOOD
Synonym:	Blood Lead (Blood Pb)
Lab Section/Phone:	Analytical Chemistry, 803-896-0886
Days Performed:	As requested
Turnaround Time:	10 Days
Specimen Required:	1 mL whole blood from venipuncture; 500 µL whole blood from finger stick or heel stick for infant screening. Venipuncture preferred for confirmation of an elevated level.
Specimen Identification:	Specimen container must be labelled with patient's full name, and a second patient identifier such as DOB, Specimen #, etc. DHEC requisition must be completed in full.
Specimen Volume (optimum):	>1 mL
Specimen Volume (minimum):	500 µL
Collect:	In general, if more than one evacuated tube of blood is to be drawn from an individual, the blood lead tube should be drawn second or later. Draw the blood through a stainless steel needle into a Vacutainer™.
Form:	DHEC 1332, Test #882
Special Instructions:	
Packing and Shipping*:	See Section IV, Transporting and Shipping Infectious Substances.
Transport Conditions:	Store and ship at room temperature. Refrigerate specimen at 4°C if shipping is delayed.
Specimen Rejection Criteria:	Clotted blood, insufficient quantity (QNS). For universal rejections, See Section I.
Availability:	Monday - Friday
Results and Interpretations:	≥5 µg/dL is considered elevated in children less than 6 years of age. Action levels for blood lead in children and adults print on result reports. Screening (finger stick/heel stick) levels ≥5 µg/dL require venipuncture confirmation.
Additional Information:	
Purpose of Test:	Identify exposure to Lead.
Method:	Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
Interfering Substances:	N/A
Comment:	N/A

Test	LEGIONELLA URINARY ANTIGEN TEST
Synonym:	Lateral-flow immunoassay for Legionella pneumophila serogroup 1 antigen in human urine specimens.
Lab Section/Phone:	Clinical Microbiology 803-896-0805
Days Performed:	Monday - Friday
Turnaround Time:	3 business days
Specimen Required:	1 ml or > of Urine collected in either airtight transport container or airtight Boric Acid Urine Tube.
Specimen Identification:	Specimen container must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	1ml
Collect:	Human Urine samples, Unpreserved: Samples should be received in an airtight transport container and stored at 2-8°C. Samples should be tested as soon as possible, but may be held up to seven days at 2-8°C. Test available only for outbreaks of Public Health importance as determined by a DHEC Epidemiologist.
Form:	DHEC requisition 1335 form, mark Legionella Urine Antigen Test
Special Instructions:	N/A
Packing and Shipping*:	Urine is considered Infectious substance. See Packing and Shipping Instructions, Section IV.
Transport Conditions:	Store in refrigerator and ship cold with cold packs. Ship in insulated shippers.
Specimen Rejection Criteria:	Improper transport media or conditions. For universal rejections, See Section I.
Availability:	Monday - Friday
Results and Interpretations:	**Negative Test:** Report test results as "No Legionella pneumophila serogroup 1 antigens detected. A negative result does not exclude infection with Legionella pneumophila serogroup 1 nor does it rule out other microbial-caused respiratory infections or disease caused by other serogroups of *Legionella pneumophilia.* **Positive Test:** Report test result as Legionella pneumophila serogroup 1 antigens detected. This result does not rule out confection with other pathogens.
Additional Information:	N/A
Purpose of Test:	N/A
Method:	Rapid, lateral-flow immunoassay for the qualitative detection of *Legionella pneumophila* serogroup 1 antigen in human urine specimens. It is designed to test specimens from patients with symptoms of pneumonia. Test results are to be used as an aid in diagnosis of *Legionella pneumophila* serogroup 1 infection. A negative result does not preclude infection with *Legionella* patient's clinical evaluation and other diagnostic procedures.
Interfering Substances:	N/A
Comment:	**Test available only for Division of Acute Disease Epidemiology (DADE).**

Test	LISTERIA SPECIES
Synonym:	*Listeria monocytogenes*
Lab Section/Phone:	Clinical Microbiology 803-896-0805
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Pure bacterial isolate on an agar slant that will support the growth of the isolate.
Specimen Identification:	Isolate must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	Pure isolate subcultured from isolated colonies to a slant that is able to support growth.
Form:	DHEC 1335 requisition, mark Organism for ID.
Special Instructions:	N/A
Packing and Shipping*:	See Packing and Shipping Instructions in Section IV. May use state courier for overnight delivery.
Transport Conditions:	Store and ship at room temperature.
Specimen Rejection Criteria:	Culture non-viable; culture mixed. For universal rejections, See Section I.
Availability:	Monday - Friday
Results and Interpretations:	*Listeria monocytogenes* isolated or not isolated.
Additional Information:	N/A
Purpose of Test:	Submission to PHL is required. Ship within 3 business days.
Method:	bioMerieux VITEK MS
Interfering Substances:	N/A
Comment:	N/A

Test	MALARIA ANTIGEN TEST (BINAXNOW)
Synonym:	*Plasmodium falciparum, Plasmodium vivax, Plasmodium ovale, Plasmodium malariae*
Lab Section/Phone:	Special Pathogens / Daytime - (803) 896-0777 or Evenings - (803) 767-8118
Days Performed:	As needed
Turnaround Time:	24 hours
Specimen Required:	3-5 mL EDTA and thin and thick pre-stained slides - See "Malaria Smear" (below).
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	3-5 mL
Specimen Volume (minimum):	3 mL
Collect:	N/A
Form:	Form 1335 #522; Malaria. DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	Notification of the test request must be made to the Special Pathogens Laboratory prior to testing.
Packing and Shipping*:	Special handling criteria apply. Please contact the Special Pathogens Laboratory instructions at 803-896-0777 / 803-767-8118.
Transport Conditions:	Determined during consultation.
Specimen Rejection Criteria:	Determined during consultation.
Availability:	As needed
Results and Interpretations:	Test results will be verbally communicated, and a hard copy report will be e-mailed or faxed.
Additional Information:	- Negative results must be confirmed by thin / thick smear microscopy. - Microscopy review is required to identify non-falciparum species and to detect potential mixed infections.
Purpose of Test:	To aid in the rapid diagnosis of human malaria infections and in the differential diagnosis of *Plasmodium falciparum* (P.f.) infections from other less virulent malarial infections.
Method:	Immunochromatographic assay
Interfering Substances:	N/A
Comment:	Please call the Special Pathogens Laboratory with any questions or concerns

Test	MALARIA SMEAR
Synonym:	Giemsa stain, Plasmodium
Lab Section/Phone:	Special Pathogens / Daytime - (803) 896-0777 or Evenings - (803) 767-8118 **THIS TEST IS PERFORMED BY CDC**
Days Performed:	As needed
Turnaround Time:	24 hours
Specimen Required:	Whole blood, stained thick and thin blood smears
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	**Blood smears:** 2 sets of smears; **Whole blood:** Please submit at least 2 ml of whole blood for CDC surveillance program.
Specimen Volume (minimum):	N/A
Collect:	Thick and thin stained blood smears Whole blood collected in EDTA tubes
Form:	DHEC 1335; Write in "Malarial Smear" at the bottom of the Special Pathogen's test section. DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	Notification of the test request must be made to the Special Pathogens Laboratory, 803-896-0777 / 803-767-8118, prior to shipment.
Packing and Shipping*:	Category B shipping requirements
Transport Conditions:	For whole blood specimens <72 hours old, store and ship on cold packs. For all other specimens, store and ship at room temperature.
Specimen Rejection Criteria:	Smears made from EDTA blood> 1 hour old; blood smears > 3 days old; For universal rejections, see **Section I**.
Availability:	Monday - Friday
Results and Interpretations:	This test is performed by CDC through the Special pathogens Laboratory. The Division of Parasitic Disease (DPDx) at CDC performs microscopic malarial species confirmation and malaria drug resistance surveillance.
Additional Information:	Images are submitted to CDC for rapid identification
Purpose of Test:	To detect and speciate plasmodium species in blood smears
Method:	Microscopic examination of Giemsa stained smear
Interfering Substances:	N/A
Comment:	Please call the Special Pathogens Laboratory with any questions or concerns.

<table>
<tr><th>Test</th><th>MEASLES (RUBEOLA) RNA DETECTION BY REAL-TIME RT PCR</th></tr>
<tr><td>Synonym:</td><td>Measles (Rubeola) PCR, RT-PCR, or rRT-PCR</td></tr>
<tr><td>Lab Section/Phone:</td><td>Virology & Rabies, 803-896-0819</td></tr>
<tr><td>Days Performed:</td><td>Monday-Friday, weekend and holiday testing approved on a case by case basis</td></tr>
<tr><td>Turnaround Time:</td><td>3 days</td></tr>
<tr><td>Specimen Required:</td><td>ONLY throat swabs or nasopharyngeal (NP) swabs will be accepted. Ideally, samples should be collected within 3 days of symptom onset; however, samples collected up to 14 days from symptom onset will be accepted. Use swabs with synthetic (polyester, nylon, etc.) tips and aluminum or plastic shafts. DO NOT USE swabs with cotton or calcium alginate tips or wooden shafts. Place the swab in viral transport media for storage and shipment.</td></tr>
<tr><td>Specimen Identification:</td><td>Patient’s full name and patient ID # (or other unique identifier) is required on the specimen and requisition.</td></tr>
<tr><td>Specimen Volume (optimum):</td><td>N/A</td></tr>
<tr><td>Specimen Volume (minimum):</td><td>N/A</td></tr>
<tr><td>Collect:</td><td>Sterile, leak-proof, screw-capped tube containing viral transport media.</td></tr>
<tr><td>Form:</td><td>DHEC 1335</td></tr>
<tr><td>Special Instructions:</td><td>All submissions require prior approval from Virology section supervisor (803-896-0819), the Microbiology Division director (803-896-0870), or designee.</td></tr>
<tr><td>Packing and Shipping*:</td><td>See Transporting and Shipping Infectious Substances in Section IV.</td></tr>
<tr><td>Transport Conditions:</td><td>Store in refrigerator; ship cold with cold packs. Specimen must be received by the PHL within 48 hours of collection. If transport is delayed, freeze at -70°C or below and ship on dry ice.</td></tr>
<tr><td>Specimen Rejection Criteria:</td><td>Sample type other than throat or nasopharyngeal (NP)swabs; Swabs with cotton or calcium alginate tips or wooden shafts; Specimens collected more than 14 days after symptom onset; Specimens shipped without transport media; Non-frozen specimens received more than 48 hours after collection. See Specimen Rejection & Disclaimer Criteria in Section I.</td></tr>
<tr><td>Availability:</td><td>Monday-Friday, weekend and holiday testing approved on a case by case basis</td></tr>
<tr><td>Results and Interpretations:</td><td>
<table>
<tr><th>Result</th><th>Interpretation</th></tr>
<tr><td>Detected</td><td>Measles RNA detected by RT-PCR</td></tr>
<tr><td>Not Detected</td><td>Unable to detect Measles RNA by RT-PCR</td></tr>
<tr><td>Inconclusive</td><td>Indeterminant: Unable to rule out the presence of Measles RNA</td></tr>
<tr><td>Unable to detect Human DNA. Results suggest sub-optimal sample collection, transport, or storage conditions.</td><td>Recollect sample</td></tr>
</table>
</td></tr>
<tr><td>Additional Information:</td><td>N/A</td></tr>
<tr><td>Purpose of Test:</td><td>To detect the presence of Measles (Rubeola) virus nucleic acid (RNA). This test will NOT detect the German Measles (Rubella).</td></tr>
<tr><td>Method:</td><td>Real-time RT-PCR</td></tr>
<tr><td>Interfering Substances:</td><td>N/A</td></tr>
<tr><td>Comment:</td><td>N/A</td></tr>
</table>

Test	MERCURY IN URINE
Synonym:	Hg in Urine
Lab Section/Phone:	Analytical Chemistry, 803-896-0886
Days Performed:	As requested
Turnaround Time:	10 Days
Specimen Required:	Urine
Specimen Identification:	Specimen container must be labelled with patient's full name, and a second patient identifier such as DOB, Specimen #, etc. DHEC requisition must be completed in full.
Specimen Volume (optimum):	2-5 mL
Specimen Volume (minimum):	500 µL
Collect:	Sterile urine cups
Form:	DHEC 1332
Special Instructions:	N/A
Packing and Shipping*:	See Section IV, Transporting and Shipping Infectious Substances.
Transport Conditions:	In general, urine specimens should be transported frozen (packed in dry ice during shipment is preferred, when possible). If shipment is delayed, urine specimens should be stored frozen.
Specimen Rejection Criteria:	Insufficient quantity (QNS); improper collection container. For universal rejections, See Section I.
Availability:	Monday – Friday
Results and Interpretations:	N/A
Additional Information:	N/A
Purpose of Test:	Identify exposure to inorganic (metallic) mercury
Method:	Inductively Coupled Plasma Mass Spectrometry
Interfering Substances:	N/A
Comment:	N/A

Test	MERS (MIDDLE EASTERN RESPIRATORY SYNDROME) NOVEL CORONAVIRUS
Synonym:	MERS
Lab Section/Phone:	Special Pathogens / Daytime - (803) 896-0777 or Evenings - (803) 767-8118
Days Performed:	As needed
Turnaround Time:	24 hours
Specimen Required:	Nasopharyngeal and /or oropharyngeal swabs, sputum, lower respiratory aspirate/washes, serum; Volume depends on sample type. Call the Special Pathogens Laboratory for more information.
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	Determined during Special Pathogens Laboratory notification.
Specimen Volume (minimum):	Determined during Special Pathogens Laboratory notification.
Collect:	Determined during Special Pathogens Laboratory notification.
Form:	DHEC 1335; Test Number 521; check "MERS" DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	**Pre-approval Needed - Hospitals must obtain approval from the DHEC health department prior to submitting specimens to the Special pathogens Laboratory. Contact information can be located on the back of the *List of Reportable Conditions*. Contact the Special Pathogens Laboratory (803-896-0777 / 803-767-8118) for test notification, specimen collection, storage conditions, and shipping conditions/methods.**
Packing and Shipping*:	Special handling criteria apply. Please contact the laboratory for special instructions at 803-896-0777 / 803-767-8118.
Transport Conditions:	Determined during Special Pathogens Laboratory notification.
Specimen Rejection Criteria:	Determined during Special Pathogens Laboratory notification.
Availability:	As needed
Results and Interpretations:	- Final results are verbally communicated to the sender to ensure correct interpretation. Final reports are provided via fax or e-mail. - The definitive identification of MERS virus requires additional testing to be performed by CDC.
Additional Information:	N/A
Purpose of Test:	To presumptively detect MERS RNA in clinical samples
Method:	CDC/LRN Real Time RT-PCR Assay, EUA
Interfering Substances:	N/A
Comment:	Please call the Special Pathogens Laboratory with any questions or concerns

<table>
<tr><th>Test</th><th>MUMPS RNA DETECTION BY REAL-TIME RT PCR</th></tr>
<tr><td>Synonym:</td><td>Mumps PCR, Mumps RT-PCR</td></tr>
<tr><td>Lab Section/Phone:</td><td>Virology & Rabies, 803-896-0819</td></tr>
<tr><td>Days Performed:</td><td>Monday-Friday, weekend and holiday testing approved on a case by case basis</td></tr>
<tr><td>Turnaround Time:</td><td>3 days</td></tr>
<tr><td>Specimen Required:</td><td>One buccal swab collected within 14 days of symptom onset. Ideal collections occur within 3 days of symptom onset. Use swabs with polyester or nylon tips and aluminum or plastic shafts. DO NOT USE cotton, wood, or calcium alginate swabs. Place swab in viral transport media for storage and shipment. See Viral Media Collection for Virology Samples in Section III, p. III-40.</td></tr>
<tr><td>Specimen Identification:</td><td>Patient’s full name and patient ID # (or other unique identifier) is required on the specimen and requisition.</td></tr>
<tr><td>Specimen Volume (optimum):</td><td>N/A</td></tr>
<tr><td>Specimen Volume (minimum):</td><td>N/A</td></tr>
<tr><td>Collect:</td><td>Buccal swab placed in a sterile, leak-proof, screw-capped tube containing viral transport media.</td></tr>
<tr><td>Form:</td><td>DHEC 1335</td></tr>
<tr><td>Special Instructions:</td><td>All submissions require prior approval from Virology section supervisor (803-896-0819), the Microbiology Division director (803-896-0870), or designee. Only specimens submitted as part of an epidemiological investigation will be accepted.</td></tr>
<tr><td>Packing and Shipping*:</td><td>See Transporting and Shipping Infectious Substances in Section IV.</td></tr>
<tr><td>Transport Conditions:</td><td>Store in refrigerator; ship cold with cold packs. Specimen must be received by the PHL within 48 hours of collection. If transport is delayed, freeze at -70°C or below and ship on dry ice.</td></tr>
<tr><td>Specimen Rejection Criteria:</td><td>Swabs with cotton or calcium alginate tips or wooden shafts; Specimens collected more than 14 days after symptom onset; Specimens shipped without transport media; Non-frozen specimens received more than 48 hours after collection. See Specimen Rejection & Disclaimer Criteria in Section I.</td></tr>
<tr><td>Availability:</td><td>Monday-Friday, weekend and holiday testing approved on a case by case basis</td></tr>
<tr><td>Results and Interpretations:</td><td>
<table>
<tr><th>Result</th><th>Interpretation</th></tr>
<tr><td>Detected</td><td>Mumps RNA detected by RT-PCR</td></tr>
<tr><td>Not Detected</td><td>Unable to detect Mumps RNA by RT-PCR</td></tr>
<tr><td>Inconclusive</td><td>Indeterminant: Unable to rule out the presence of Mumps RNA</td></tr>
<tr><td>Unable to detect Human DNA. Results suggest sub-optimal sample collection, transport, or storage conditions.</td><td>Recollect sample</td></tr>
</table>
</td></tr>
<tr><td>Additional Information:</td><td>Only specimens submitted as part of an epidemiological investigation will be accepted.</td></tr>
<tr><td>Purpose of Test:</td><td>To detect the presence of Mumps virus nucleic acid (RNA).</td></tr>
<tr><td>Method:</td><td>Real-time reverse transcriptase polymerase chain reaction.</td></tr>
<tr><td>Interfering Substances:</td><td>N/A</td></tr>
<tr><td>Comment:</td><td>N/A</td></tr>
</table>

<table>
<tr><th>Test</th><th>MUMPS VIRUS SEROLOGY IgG and IgM</th></tr>
<tr><td>Synonym:</td><td>Parotitis Epidemica antibodies</td></tr>
<tr><td>Lab Section/Phone:</td><td>Virology & Rabies, 803-896-0819</td></tr>
<tr><td>Days Performed:</td><td>N/A</td></tr>
<tr><td>Turnaround Time:</td><td>IgG: 10 days
IgM: 5 days</td></tr>
<tr><td>Specimen Required:</td><td>Serum</td></tr>
<tr><td>Specimen Identification:</td><td>Patient’s full name and patient ID # (or other unique identifier) is required on the specimen and requisition.</td></tr>
<tr><td>Specimen Volume (optimum):</td><td>2mL serum</td></tr>
<tr><td>Specimen Volume (minimum):</td><td>1 mL serum</td></tr>
<tr><td>Collect:</td><td>Serum Separator vacuum tube (SST), centrifuged appropriately. (Red top vacuum tubes may be used if the sample is centrifuged and serum is removed from the clot and put into a different container/tube.) Please follow manufacturer’s guidelines. See Specimen Collection: Venipuncture Procedure in Section III if needed.</td></tr>
<tr><td>Form:</td><td>DHEC 1332</td></tr>
<tr><td>Special Instructions:</td><td>None</td></tr>
<tr><td>Packing and Shipping*:</td><td>See Transporting and Shipping Infectious Substances in Section IV.</td></tr>
<tr><td>Transport Conditions:</td><td>Store at 2-8°C and ship on cold packs.</td></tr>
<tr><td>Specimen Rejection Criteria:</td><td>None. See Specimen Rejection & Disclaimer Criteria in Section I.</td></tr>
<tr><td>Availability:</td><td>Mumps IgG once/week; Mumps IgM as needed.</td></tr>
<tr><td>Results and Interpretations:</td><td>Mumps IgG immune status reported as positive, negative or equivocal.
Mumps IgM reported as positive or negative.</td></tr>
<tr><td>Additional Information:</td><td>
<table>
<tr><th>Results</th><th>Interpretations</th></tr>
<tr><th colspan="2">Mumps IgG</th></tr>
<tr><td>Positive</td><td>IgG antibodies to the Mumps virus were detected. A positive test indicates a current or past infection, or prior vaccination against, the Mumps virus.</td></tr>
<tr><td>Negative</td><td>Indicates no detectable IgG antibodies to the Mumps virus. A non-reactive result indicates no current or previous infection with Mumps virus. Such patients are presumed to be non-immune and are therefore susceptible to a primary infection. A non-reactive result may be obtained early in seroconversion of infected individuals. If this is suspected, obtain an additional specimen in 3-5 weeks for re-testing.</td></tr>
<tr><td>Equivocal</td><td>Re-evaluate by collecting and testing another sample after 14 days.</td></tr>
<tr><th colspan="2">Mumps IgM</th></tr>
<tr><td>Positive</td><td>Indicates an acute infection.</td></tr>
<tr><td>Negative</td><td>Indicates no detectable IgM antibody to the Mumps virus.</td></tr>
</table>
</td></tr>
<tr><td>Purpose of Test:</td><td>Mumps IgG: To detect Mumps IgG antibodies for determining immune status.
Mumps IgM: To detect Mumps IgM antibodies for diagnosing a current infection.</td></tr>
<tr><td>Method:</td><td>EIA for Mumps IgG; IFA for Mumps IgM.</td></tr>
<tr><td>Interfering Substances:</td><td>N/A</td></tr>
<tr><td>Comment:</td><td>N/A</td></tr>
</table>

Test	MYCOBACTERIAL CULTURE, BLOOD
Synonym:	TB, AFB
Lab Section/Phone:	Mycobacteriology (TB), 803-896-0828
Days Performed:	Monday-Friday
Turnaround Time:	56 days
Specimen Required:	1-5 mL whole blood; with optimum recovery obtained at 3 mL to 5 mL.
Specimen Identification:	Specimen must be labeled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	The range of blood volume which can be cultured is 1 mL to 5 mL, with optimum recovery obtained at 3 mL to 5 mL.
Specimen Volume (minimum):	The range of blood volume which can be cultured is 1 mL to 5 mL, with optimum recovery obtained at 3 mL to 5 mL.
Collect:	1-5 mL whole blood in BD BACTEC Myco/F Lytic Culture Vials
Form:	DHEC 1335
Special Instructions:	The specimen must be collected using sterile technique to reduce the chance of contamination.
Packing and Shipping*:	**See Section IV, Transporting and Shipping Infectious Substances.**
Transport Conditions:	Store and ship at room temperature. Incubate at 37 º C if shipping is delayed over 24 hours.
Specimen Rejection Criteria:	For universal rejections, See **Specimen Rejection and Disclaimer Criteria in Section I, p. I-5**
Availability:	Monday-Friday
Results and Interpretations:	Final ID will be reported out as: No Mycobacteria isolated, M. tuberculosis complex by DNA probe, MAC by DNA probe, Mycobacterium isolated: not M.tb or M. avium complex, Growth resembling Mycobacterium tuberculosis complex, or Growth resembling Mycobacterium avium complex.
Additional Information:	N/A
Purpose of Test:	Detection of mycobacteria in blood.
Method:	BACTEC FX40 system, Gen-Probe
Interfering Substances:	Other aerobic organisms including bacteria may, if present, interfere with the recovery of slower growing mycobacteria.
Comment:	N/A

Test	MYCOBACTERIAL CULTURE, Other than Blood
Synonym:	AFB, TB
Lab Section/Phone:	Mycobacteriology (TB), 803-896-0828
Days Performed:	Monday – Friday
Turnaround Time:	56 days
Specimen Required:	Sputum, body fluids,
Specimen Identification:	Specimen must be labeled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	5-10 ml sputum, and other body fluids; 10 ml urine or gastric washings, walnut sized portion of feces or 10 ml liquid stool. See **Mycobacterium Culture Collection Procedure.**
Specimen Volume (minimum):	N/A
Collect:	Screw capped 50 ml polypropylene conical tube
Form:	DHEC 1335, Test #601
Special Instructions:	N/A
Packing and Shipping*:	See Section IV, Transporting and Shipping Infectious Substances.
Transport Conditions:	Store and ship sputum at room temperature; if shipping is delayed more than 24 hours, store in refrigerator. Store urine in refrigerator and ship with cold packs.
Specimen Rejection Criteria:	Specimen > 5 days old when received (Sputum and Urine). For universal rejections, see **Specimen Rejection and Disclaimer Criteria in Section I, p. I-5.**
Availability:	Monday-Friday
Results and Interpretations:	Final ID will be reported out as: No Mycobacteria isolated, M. tuberculosis complex by DNA probe, MAC by DNA probe, Mycobacterium isolated: not M.tb or M. avium complex, Growth resembling Mycobacterium tuberculosis complex, Growth resembling Mycobacterium avium complex or Culture was contaminated. Please Repeat.
Additional Information:	N/A
Purpose of Test:	Detection of Mycobacteria in clinical specimens.
Method:	Conventional culture methods, Gen-probe for ID, GeneXpert MTB/RIF for rapid identification of Mycobacterium tuberculosis DNA and resistance to rifampicin (sputum samples only)
Interfering Substances:	N/A
Comment:	N/A

Test	MYCOBACTERIAL CULTURE, REFERRED FOR IDENTIFICATION
Synonym:	AFB, TB
Lab Section/Phone:	Mycobacteriology (TB), 803-896-0828
Days Performed:	Monday - Friday
Turnaround Time:	1 week
Specimen Required:	Send only pure culture with sufficient growth to perform test
Specimen Identification:	Isolate must be labeled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	Sufficient growth to perform test
Specimen Volume (minimum):	Sufficient growth to perform test
Collect:	Pure culture; LJ slant preferred
Form:	DHEC 1335, Test #602
Special Instructions:	Send only pure culture with sufficient growth to perform test
Packing and Shipping*:	See **Section IV, Transporting and Shipping Infectious Substances.**
Transport Conditions:	Ship at room temperature
Specimen Rejection Criteria:	Contaminated culture, non-viable organism. For universal rejections, see **Section I Specimen Rejection and Disclaimer Criteria, p. I-5**
Availability:	Monday-Friday
Results and Interpretations:	Final ID will be reported out as: No Mycobacteria isolated, M. tuberculosis complex by DNA probe, MAC by DNA probe, Mycobacterium isolated: not M.tb or M. avium complex or Culture was contaminated. Please Repeat.
Additional Information:	N/A
Purpose of Test:	Identification of Mycobacterium from culture.
Method:	Gen-Probe
Interfering Substances:	N/A
Comment:	N/A

Test	NEISSERIA MENINGITIDIS
Synonym:	Bacterial meningitis
Lab Section/Phone:	Clinical Microbiology 803 – 896-0805
Days Performed:	Monday - Friday
Turnaround Time:	5 business days
Specimen Required:	Pure bacterial isolate on an agar slant that will support the growth of the isolate. (Chocolate agar slant is preferred)
Specimen Identification:	Isolate container must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	Submit well isolated colonies subbed to a slant that will support the growth, incubate overnight in CO2.
Form:	DHEC 1335 requisition, mark Organism for ID.
Special Instructions:	N/A
Packing and Shipping*:	See Packing and Shipping Instructions in Section IV. May use state courier for overnight delivery.
Transport Conditions:	Store in a 35°C CO2 incubator and ship at room temperature.
Specimen Rejection Criteria:	Culture non-viable; culture mixed. For universal rejections, see Section 1.
Availability:	Monday - Friday
Results and Interpretations:	Isolate will be confirmed and serogrouped.
Additional Information:	Submit all *N. meningitidis* isolated from normally sterile site, within 1 business day.
Purpose of Test:	Confirmation of identification and serogroup.
Method:	bioMerieux VITEK MS, Serogroup
Interfering Substances:	N/A
Comment:	N/A

Test	NEWBORN SCREENING PANEL
Synonym:	N/A; Panel includes screening for: • Amino Acid Disorders • Organic Acid Conditions • Fatty Acid Disorders • Biotinidase Deficiency • Classic Galactosemia • Cystic Fibrosis • Certain Hemoglobinopathies • Primary Congenital Hypothyroidism • Congenital Adrenal Hyperplasia • Severe Combined Immunodeficiencies
Lab Section/Phone:	Newborn Screening/ 803-896-0874
Days Performed:	Monday - Saturday
Turnaround Time:	4 days
Specimen Required:	Dried blood spot collected on DHEC 1327 collection form
Specimen Identification:	Patient's full name and date of birth written on DHEC 1339 collection form.
Specimen Volume (optimum):	All 5 circles filled
Specimen Volume (minimum):	Varies depending on how full each circle is, how well the blood saturates the paper, and if any repeat testing is needed
Collect:	Heel stick; See **Specimen Collection: Heel-Stick Procedure for Patients Less than 1 Year Old, Section III, p. III-27.**
Form:	DHEC 1327 collection form
Special Instructions:	Allow the specimen to dry horizontally for at least 4 hours prior to packing; fold over Biohazard labeled flap once specimen is dry; don't use capillary tubes for collection
Packing and Shipping*:	Place dried specimen in paper envelope/cardboard mailer.
Transport Conditions:	Ambient temperature; NO PLASTIC BAGS
Specimen Rejection Criteria:	Specimen received in plastic bag; specimen collected on expired collection form; specimen older than 14 days; patient older than 1 year; specimen quality or quantity inadequate
Availability:	N/A
Results and Interpretations:	N/A
Additional Information:	N/A
Purpose of Test:	Identifies newborns that may be at an increased risk of having a certain serious condition
Method:	• **Tandem Mass Spectrometry**: Amino Acid Disorders, Organic Acid Conditions, Fatty Acid Disorders • **Enzymatic & Fluorescence**: Biotinidase Deficiency, Classic Galactosemia • **Fluorimmuno assay and/or PCR**: Cystic Fibrosis • **High Performance Liquid Chromatography and/or Iso-electric focusing**: Certain Hemoglobinopathies • **Fluorimmuno assay**: Primary Congenital Hypothyroidism, Congenital Adrenal Hyperplasia • **PCR**: Severe Combined Immunodeficiencies
Interfering Substances:	N/A
Comment:	N/A

Test	NOROVIRUS DETECTION BY REAL TIME RT PCR
Synonym:	Norwalk Virus, Norovirus PCR
Lab Section/Phone:	Virology & Rabies, 803-896-0819
Days Performed:	Monday-Friday
Turnaround Time:	N/A
Specimen Required:	A peanut-sized or tablespoon volume of fresh diarrheal stool. Specimens collected within 48-72 hours of symptom onset are preferred. Specimens collected within 7 days of symptom onset will be accepted. Rectal swabs are not acceptable. Please batch submissions if possible.
Specimen Identification:	Patient's full name and patient ID # (or other unique identifier) is required on the specimen and requisition.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	A peanut-sized or tablespoon volume of fresh diarrheal stool.
Collect:	Stool in a sterile, screw capped, leak-proof, 50 mL conical tube or urine container.
Form:	DHEC 1335
Special Instructions:	N/A
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Store in refrigerator and ship with cold packs.
Specimen Rejection Criteria:	Specimens placed in any type of media; Specimen not cold; Specimen more than 7 days old when received. See **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	Monday-Friday; Availability of this test is restricted to epidemiological investigations. Approval for testing must be obtained and documented on the requisition prior to specimen submission. Please call 803-896-0819 to obtain approval.
Results and Interpretations:	Results are reported as negative or positive for the presence of genogroup I or genogroup II Norovirus.
Additional Information:	N/A
Purpose of Test:	To detect the presence of Norovirus nucleic acid (RNA).
Method:	Real-time reverse transcriptase polymerase chain reaction (real-time RT-PCR)
Interfering Substances:	N/A
Comment:	N/A

Test	ORGANISM for IDENTIFICATION
Synonym:	Any bacterial isolates required to be submitted per the South Carolina List of Reportable Conditions.
Lab Section/Phone:	Clinical Microbiology 803-896-0805
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Pure bacterial isolates subbed from an isolated colony to an agar slant that will permit growth of the organism.
Specimen Identification:	Isolate must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	Pure culture of isolate, subbed from an isolated colony to an agar slant that will permit growth of the organism.
Form:	DHEC 1335 requisition, mark Organism for ID
Special Instructions:	N/A
Packing and Shipping*:	Ship according to directions listed under specific organism.
Transport Conditions:	See specific organism for conditions
Specimen Rejection Criteria:	Mixed isolate, for universal rejections, See Section I.
Availability:	Monday – Friday unless otherwise noted for specific organism.
Results and Interpretations:	Organism identification confirmed or not. Serotyping and serogrouping as needed
Additional Information:	N/A
Purpose of Test:	N/A
Method:	bioMeriuex VITEK MS, Conventional methods, biochemicals, serotyping/grouping
Interfering Substances:	N/A
Comment:	N/A

<table>
<tr><th>Test</th><th>QuantiFERON-TB Gold Plus (QFT)</th></tr>
<tr><td>Synonym:</td><td>QFT, Interferon-Gamma Release Assay (IGRA)</td></tr>
<tr><td>Lab Section/Phone:</td><td>Virology & Rabies, 803-896-0819</td></tr>
<tr><td>Days Performed:</td><td>Monday-Friday; weekend testing available with prior approval by Supervisor or Division Director.</td></tr>
<tr><td>Turnaround Time:</td><td>7 days</td></tr>
<tr><td>Specimen Required:</td><td>Whole blood in 4 QFT-Plus blood collection tubes</td></tr>
<tr><td>Specimen Identification:</td><td>Patient’s full name and patient ID # (or other unique identifier) is required on the specimen and requisition.</td></tr>
<tr><td>Specimen Volume (optimum):</td><td>1 mL whole blood</td></tr>
<tr><td>Specimen Volume (minimum):</td><td>0.8 mL – 1.2 mL, as indicated on tube labels with 2 black fill lines</td></tr>
<tr><td>Collect:</td><td>4 QuantiFERON-TB Gold Plus tubes:
Nil antigen (Grey cap)
TB 1 antigen (Green cap)
TB 2 antigen (Yellow cap)
Mitogen (Purple cap)
Specific collection requirements are needed. For detailed collection procedure, see QuantiFERON-TB Gold Plus (QFT-Plus) Collection Procedure in Section III p. III-31</td></tr>
<tr><td>Form:</td><td>DHEC 1335; be sure to write the incubation start and end times on this form.</td></tr>
<tr><td>Special Instructions:</td><td>See QuantiFERON-TB Gold Plus (QFT-Plus) Collection Procedure in Section III p. III-31 for specific information on collection, specimen handling and transport,</td></tr>
<tr><td>Packing and Shipping*:</td><td>Store at room temperature (17-25°C) prior to and after incubation. Specimens should be shipped and received within 3 days post-incubation, or within 16 hours of collection if NOT incubated in the regions. Place the specimen inside designated QFT-Plus shipper (large white shipper with pink label) and ship at room temperature (27-25°C) via the DHEC internal courier system.</td></tr>
<tr><td>Transport Conditions:</td><td>Ship at room temperature (27-25°C) to the attention of Virology in a designated QFT-plus shipper.</td></tr>
<tr><td>Specimen Rejection Criteria:</td><td>Specimens with volumes below 0.8 mL or above 1.2 mL, as indicated by the black fill lines on tube labels; Specimens not incubated within the proper incubation period; Specimens requiring incubation at 37°C that are not received by the PHL within 16 hours of collection. See Specimen Rejection & Disclaimer Criteria in Section I.</td></tr>
<tr><td>Availability:</td><td>Monday-Friday</td></tr>
<tr><td>Results and Interpretations:</td><td><table><tr><th>Result</th><th>Interpretation</th></tr><tr><td>Positive</td><td>M. tuberculosis infection likely</td></tr><tr><td>Negative</td><td>M. tuberculosis infection not likely</td></tr><tr><td>Indeterminate</td><td>Likelihood of M. tuberculosis infection cannot be determined</td></tr></table></td></tr>
<tr><td>Additional Information:</td><td>N/A</td></tr>
<tr><td>Purpose of Test:</td><td>Aids in the diagnosis of Mycobacterium tuberculosis (TB) infection</td></tr>
<tr><td>Method:</td><td>Detection of interferon-γ by ELISA</td></tr>
<tr><td>Interfering Substances:</td><td>N/A</td></tr>
<tr><td>Comment:</td><td>N/A</td></tr>
</table>

Test	RABIES EXAMINATION
Synonym:	N/A
Lab Section/Phone:	Virology & Rabies, 803-896-0819
Days Performed:	Monday - Friday only. Weekend and holiday only with notification and emergency testing criteria being met, specifically: (a) An unprovoked wild animal bite to a human, such as bites from a raccoon, fox, skunk, bobcat, coyote, etc.; or (b) A bat when there is an obvious bat bite, or if individuals awaken and find a bat in their room, or if there is a bat in a room with an unattended child or near a mentally impaired or intoxicated person.
Turnaround Time:	24 hour
Specimen Required:	Brain tissue
Specimen Identification:	N/A
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	Whole animal head
Collect:	Ship whole animal head. Heads are **only** submitted by DHEC Rabies Control Staff.
Form:	DHEC 1308 Test #260
Special Instructions:	Contact the **local county health department** for the information on specimen collection and shipping instructions. **Confirmation is a postmortem procedure;** because standard procedure currently requires the examination of brain tissue, the suspect animal must either be sacrificed or have died before the examination can be performed. All county health departments maintain containers appropriate for shipping specimens for examination, information on the management of animals suspected of being rabid, and information to obtain vaccine for persons exposed to a rabid animal after consultation with state epidemiologist.
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Keep cold. See Special Instructions above.
Specimen Rejection Criteria:	No brain tissue or tissue decomposed or grossly contaminated. See **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	See Days Performed above.
Results and Interpretations:	Reported as Positive or Negative. All Positive reports are called directly to the county health department, or after regular working hours, to the county environmentalist who submitted the specimen.
Additional Information:	N/A
Purpose of Test:	To detect the rabies viral antigen in brain tissue of suspected animals, for the protection of persons exposed.
Method:	Fluorescent Antibody (FA)
Interfering Substances:	N/A
Comment:	The PHL is the only laboratory in SC that performs testing for rabies in animals. Human testing is only performed at CDC with prior approval. Call Virology/Rabies before sending to obtain proper documentation. 803-896-0819 or 803-896-0820.

Test	RESPIRATORY PANEL 2 by FilmArray (PCR)
Synonym:	Adenovirus (AdV); Coronavirus (CoV) 229E, HKU1, NL63, OC43; Enterovirus (EV); c Human Rhinovirus (RHV); Human Metapneumovirus (hMPV); Influenza A (Flu A) (subtypes H1, H1-2009, and H3); Influenza B (Flu B); Parainfluenza Virus 1 (PIV1); Parainfluenza Virus 2 (PIV2); Parainfluenza Virus 3 (PIV3); Parainfluenza Virus 4 (PIV4); Respiratory Syncytial Virus (RSV); Bordetella pertussis; Bordetella parapertussis; Chlamydophila pneumoniae; and Mycoplasma pneumoniae
Lab Section/Phone:	Virology & Rabies, 803-896-0819
Days Performed:	Monday-Friday
Turnaround Time:	5 days
Specimen Required:	Nasopharyngeal (NP) swab placed in viral transport media
Specimen Identification:	Patient's full name and patient ID # (or other unique identifier) is required on the specimen and requisition.
Specimen Volume (optimum):	2-3 mL of viral transport media containing a nasopharyngeal (NP) swab
Specimen Volume (minimum):	N/A
Collect:	Nasopharyngeal (NP) swab placed immediately into sterile tubes containing 2-3 mL of viral transport media. Use only synthetic fiber swabs with plastic shafts. Do not use calcium alginate swabs or swabs with wooden shafts, as they may contain substances that inactivate some viruses and inhibit PCR testing. See **Viral Media Collection for Virology Samples in Section III, p. III-40.**
Form:	DHEC 1335; Request BioFire FilmArray RP2 Panel
Special Instructions:	Call Virology at 803-896-0819
Packing and Shipping*:	Store in refrigerator. Ship with cold packs. If shipping is delayed more than 48 hours, freeze at -70°C and ship on dry ice. See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Ship on cold packs. If shipping is delayed more than 48 hours, freeze at -70°C and ship on dry ice.
Specimen Rejection Criteria:	Specimen type other than nasopharyngeal (NP) swab; Use of calcium alginate swabs or swabs with wooden shafts; Specimen not cold on arrival. See **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	For outbreaks as determined by the SC DHEC Division of Acute Disease Epidemiology
Results and Interpretations:	N/A
Additional Information:	N/A
Purpose of Test:	To identify Adenovirus (AdV); Coronavirus (CoV) 229E, HKU1, NL63, OC43; Enterovirus (EV); Human Rhinovirus (RHV); Human Metapneumovirus (hMPV); Influenza A (Flu A) (subtypes H1, H1-2009, and H3); Influenza B (Flu B); Parainfluenza Virus 1 (PIV1); Parainfluenza Virus 2 (PIV2); Parainfluenza Virus 3 (PIV3); Parainfluenza Virus 4 (PIV4); Respiratory Syncytial Virus (RSV); Bordetella pertussis; Bordetella parapertussis; Chlamydophila pneumoniae; and Mycoplasma pneumoniae
Method:	Multiplex Real-time PCR
Interfering Substances:	N/A
Comment:	N/A

Test	RPR (RAPID PLASMA REAGIN)
Synonym:	RPR, Non-Treponemal Antibody
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday - Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	Serum
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	1.5 mL of serum
Specimen Volume (minimum):	1 mL of serum
Collect:	Serum-separator tube or serum. (Red top vacuum tubes may only be used if the sample is sent in within 24 hours or centrifuged and serum is removed from the clot and put into a different container/tube.) See Venipuncture procedure Section III, if needed.
Form:	DHEC 1332 Test #001, 002, 004 or Test #235 (All samples submitted to the PHL will undergo the reverse-algorithm.)
Special Instructions:	N/A
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Store and ship at room temperature; refrigerate and ship cold if more than 24 hours. Specimen must arrive within 3 days of collection.
Specimen Rejection Criteria:	Plasma specimen; more than 24 hours old. For universal rejections, See Section I
Availability:	Monday-Friday
Results and Interpretations:	N/A
Additional Information:	Reflex test for reactive Syphilis TP's; Quantitation performed on RPR reactive samples.
Purpose of Test:	To aid in the detection, diagnosis, and staging of syphilis
Method:	Charcoal flocculation
Interfering Substances:	N/A
Comment:	N/A

<table>
<tr><th>Test</th><th>RUBELLA SEROLOGY- IgG and IgM</th></tr>
<tr><td>Synonym:</td><td>German Measles antibody, Rubella immune screen, Rubella IgG and IgM</td></tr>
<tr><td>Lab Section/Phone:</td><td>Virology & Rabies, 803-896-0819</td></tr>
<tr><td>Days Performed:</td><td>N/A</td></tr>
<tr><td>Turnaround Time:</td><td>IgG: N/A
IgM: N/A</td></tr>
<tr><td>Specimen Required:</td><td>Serum</td></tr>
<tr><td>Specimen Identification:</td><td>Patient’s full name and patient ID # (or other unique identifier) is required on the specimen and requisition.</td></tr>
<tr><td>Specimen Volume (optimum):</td><td>2 mL serum</td></tr>
<tr><td>Specimen Volume (minimum):</td><td>1 mL serum</td></tr>
<tr><td>Collect:</td><td>Serum Separator vacuum tube (SST), centrifuged appropriately. (Red top vacuum tubes may be used if the sample is centrifuged and serum is removed from the clot and put into a different container/tube.) Please follow manufacturer’s guidelines. See Specimen Collection: Venipuncture Procedure in Section III if needed.</td></tr>
<tr><td>Form:</td><td>DHEC 1332</td></tr>
<tr><td>Special Instructions:</td><td>Call Virology, 803-896-0819, prior to sending specimen for IgM. Rubella IgG does not require notification.</td></tr>
<tr><td>Packing and Shipping*:</td><td>See Transporting and Shipping Infectious Substances in Section IV.</td></tr>
<tr><td>Transport Conditions:</td><td>N/A</td></tr>
<tr><td>Specimen Rejection Criteria:</td><td>See Specimen Rejection & Disclaimer Criteria in Section I.</td></tr>
<tr><td>Availability:</td><td>IgG: Performed once per week
IgM: Performed as needed</td></tr>
<tr><td>Results and Interpretations:</td><td>
<table>
<tr><th>Result</th><th>Interpretation</th></tr>
<tr><th colspan="2">Rubella IgG</th></tr>
<tr><td>Positive</td><td>Indicates a current or previous infection with Rubella virus, or prior vaccination against Rubella virus.</td></tr>
<tr><td>Equivocal</td><td>Collect and test another sample.</td></tr>
<tr><td>Negative</td><td>No detectable IgG antibodies to the Rubella virus. A non-reactive result indicates no current or previous infection with Rubella virus. Such patients are presumed to be susceptible to a primary infection. However, specimens taken too early during a primary infection may not have detectable levels of IgG antibody. If this is suspected, collect and test another sample in 8-14 days.</td></tr>
<tr><th colspan="2">Rubella IgM</th></tr>
<tr><td>Positive</td><td>Reactive for IgM antibodies to Rubella virus. A positive value indicates a current or previous infection with Rubella virus, or prior vaccination against Rubella virus.</td></tr>
<tr><td>Equivocal</td><td>A second specimen should be collected and tested 10-14 days later. If the second specimen is also equivocal, the patient should be considered negative for primary infection and equivocal for antibody status. If the second specimen is positive, the patient should be considered to have a primary infection.</td></tr>
<tr><td>Negative</td><td>No detectable IgM antibodies to the Rubella virus. A non-reactive result indicates no current or previous infection with Rubella virus.</td></tr>
</table>
</td></tr>
<tr><td>Additional Information:</td><td>N/A</td></tr>
<tr><td>Purpose of Test:</td><td>IgM: Used in diagnosis of measles and during possible outbreaks. IgM antibodies usually appear 3-5 days after onset of rash.
IgG: Used to determine immune status of patient.</td></tr>
<tr><td>Method:</td><td>EIA (Enzyme Immunoassay)</td></tr>
<tr><td>Interfering Substances:</td><td>N/A</td></tr>
<tr><td>Comment:</td><td>N/A</td></tr>
</table>

<table>
<tr><th>Test</th><th>RUBEOLA VIRUS SEROLOGY-IMMUNE STATUS/DIAGNOSTIC</th></tr>
<tr><td>Synonym:</td><td>Measles IgG, Measles IgM</td></tr>
<tr><td>Lab Section/Phone:</td><td>Virology & Rabies, 803-896-0819</td></tr>
<tr><td>Days Performed:</td><td>N/A</td></tr>
<tr><td>Turnaround Time:</td><td>IgG: 10 days</td></tr>
<tr><td>Specimen Required:</td><td>Serum</td></tr>
<tr><td>Specimen Identification:</td><td>Patient’s full name and patient ID # (or other unique identifier) is required on the specimen and requisition.</td></tr>
<tr><td>Specimen Volume (optimum):</td><td>2 mL serum</td></tr>
<tr><td>Specimen Volume (minimum):</td><td>1 mL serum</td></tr>
<tr><td>Collect:</td><td>Serum Separator vacuum tube (SST), centrifuged appropriately. (Red top vacuum tubes may be used if the sample is centrifuged and serum is removed from the clot and put into a different container/tube.) Please follow manufacturer’s guidelines. See Specimen Collection: Venipuncture Procedure in Section III if needed.</td></tr>
<tr><td>Form:</td><td>DHEC 1332</td></tr>
<tr><td>Special Instructions:</td><td>Call Virology, 803-896-0819, prior to sending specimen for IgM. Rubeola IgG does not require notification.</td></tr>
<tr><td>Packing and Shipping*:</td><td>See Transporting and Shipping Infectious Substances in Section IV.</td></tr>
<tr><td>Transport Conditions:</td><td>Store and ship at room temperature or on cold packs.</td></tr>
<tr><td>Specimen Rejection Criteria:</td><td>See Specimen Rejection & Disclaimer Criteria in Section I.</td></tr>
<tr><td>Availability:</td><td>IgG: Once per week
IgM: Referred to CDC</td></tr>
<tr><td>Results and Interpretations:</td><td>
<table>
<tr><th>Result</th><th>Interpretation</th></tr>
<tr><th colspan="2">Measles IgG</th></tr>
<tr><td>Positive</td><td>Reactive to IgG antibodies to Rubeola virus. Indicates a current or previous infection with Rubeola virus, or prior vaccination against Rubeola virus.</td></tr>
<tr><td>Equivocal</td><td>Obtain and test another sample.</td></tr>
<tr><td>Negative</td><td>Indicates no detectable IgG antibodies to the Rubeola virus. A non-reactive result indicates no current or previous infection with Rubeola virus. Such patients are presumed to be non-immune and are therefore susceptible to a primary infection. A non-reactive result may be obtained early in seroconversion of infected individuals. If this is suspected, obtain and test an additional specimen in 8-14 days.</td></tr>
</table>
</td></tr>
<tr><td>Additional Information:</td><td>N/A</td></tr>
<tr><td>Purpose of Test:</td><td>IgG: Used to determine immune status of patient.
IgM: Used in diagnosis of measles and during possible outbreaks. IgM antibodies usually appear 3-5 days after onset of rash.</td></tr>
<tr><td>Method:</td><td>EIA (Enzyme Immunoassay)</td></tr>
<tr><td>Interfering Substances:</td><td>N/A</td></tr>
<tr><td>Comment:</td><td>N/A</td></tr>
</table>

Test	SCABIES
Synonym:	Mites, Sarcoptes scabiei
Lab Section/Phone:	Entomology-Dr. Chris Evans, 803-896-3802
Days Performed:	Monday-Friday
Turnaround Time:	N/A
Specimen Required:	Skin scrapings from infected area. See **Specimen Collection: Skin Scrapings for Scabies in Section III, p. III-45.**
Specimen Identification:	N/A
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	Place skin scrapings in 1-2 drops of mineral oil on a glass slide and cover with a cover slip.
Form:	DHEC 1335, Test #410
Special Instructions:	**Please notify Dr. Evans prior to submission.**
Packing and Shipping*:	Place cover-slipped slide in cardboard slide mailer and then in biohazard specimen transport bag. See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Store and ship at room temperature.
Specimen Rejection Criteria:	Too much oil (more than 2 drops) used during collection. See **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	N/A
Results and Interpretations:	N/A
Additional Information:	N/A
Purpose of Test:	Detection of Scabies
Method:	Microscopic examination
Interfering Substances:	N/A
Comment:	N/A

Test	STAPHYLOCOCCUS
Synonym:	Enteric Pathogen Culture, *Staphylococcus aureus,* for VISA/VRSA confirmation, see *Staphylococcus* (VISA/VRSA) isolates.
Lab Section/Phone:	Clinical specimens and isolates – Clinical Microbiology 803 – 896-0805 Food Specimens – Food Microbiology 803 – 896 – 0872 MRSA/VRSA isolates from suspected outbreaks – Molecular Microbiology 803 – 896-0826
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Swabs – transport in medium that will support the growth of the organism. Referred Isolate – transport on an agar slant that will support growth Food – call the food microbiology laboratory before shipping food samples (803-896-0872)
Specimen Identification:	Specimen container and Isolates must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container or isolates should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	N/A
Form:	DHEC requisition 1335
Special Instructions:	N/A
Packing and Shipping*:	Ship at room temperature. See Packing and Shipping Instructions in Section IV. May use state courier for overnight delivery.
Transport Conditions:	Ship at room temperature.
Specimen Rejection Criteria:	Culture non-viable; culture mixed. For universal rejections, see **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	Monday - Friday
Results and Interpretations:	N/A
Additional Information:	N/A
Purpose of Test:	N/A
Method:	Conventional culture methods and biochemical analysis. bioMerieux VITEK MS, WGS for outbreak investigations.
Interfering Substances:	N/A
Comment:	N/A

Test	STAPHYLOCOCCUS (VISA/VRSA) ISOLATES
Synonym:	Vancomycin Intermediate Staphylococcus aureus, Vancomycin Resistant Staphylococcus aureus **Staphylococcus aureus, vancomycin-resistant or intermediate with a VA >6 MIC.**
Lab Section/Phone:	Clinical Microbiology 803 – 896-0805
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Pure, low passage isolate on a non-inhibitory, non-selective agar plate or slant that will support the growth of the isolate. Include both isolated colony and at least one original culture plate as resistance can be lost over time and subbing out organism.
Specimen Identification:	Isolate must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Isolate should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	Be sure to submit a pure bacterial isolate, subbed from an isolated colony.
Form:	DHEC 1335 requisition, Mark Organism for ID
Special Instructions:	**According to the CDC and the 2010 CLSI update, only isolates with a commercial instrument MIC or E-test > 6 need to be sent to a reference laboratory for confirmation. According to the CDC results from the Vitek 2, MicroScan, Phoenix, or E-test are accurate and correlate with studies performed at the CDC. MIC values of 2,3, and 4 are not uncommon.**
Packing and Shipping*:	See Packing and Shipping Instructions in Section IV. May use state courier for overnight delivery.
Transport Conditions:	Ship at room temperature.
Specimen Rejection Criteria:	Culture non-viable, culture mixed. For universal rejections, see **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	Monday - Friday
Results and Interpretations:	N/A
Additional Information:	Specimen submission to the Public Health Laboratory (PHL) is required. Ship within 1 business day.
Purpose of Test:	N/A
Method:	bioMerieux VITEK MS, E-test
Interfering Substances:	N/A
Comment:	N/A

Test	STREPTOCOCCUS (BETA HEMOLYTIC GROUP A)
Synonym:	Group A Strep, *Streptococcus pyrogenes*
Lab Section/Phone:	Clinical Microbiology 803-896-0803
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Isolate on agar slant that is able to promote growth
Specimen Identification:	Isolate must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Isolate should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	N/A
Form:	DHEC 1335 requisition form, mark Organism for ID, write under special instructions, Freeze organism
Special Instructions:	Submit Group A Beta hemolytic *Streptococcus* (*S. Pyrogens)* organism that are of epidemiologic concern, to be frozen for possible surveillance studies at a later date.
Packing and Shipping*:	See Packing and Shipping instructions in Section IV. May use state courier for overnight delivery
Transport Conditions:	Store and Ship at room temperature
Specimen Rejection Criteria:	See **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	Monday - Friday
Results and Interpretations:	N/A
Additional Information:	All Group A Strep submitted will be logged and frozen on freezer beads for possible epidemiological surveillance at a later date.
Purpose of Test:	N/A
Method:	bioMereieux VITEK MS, freezer beads
Interfering Substances:	N/A
Comment:	N/A

Test	STREPTOCOCCUS PNEUMONIAE
Synonym:	Strep pneumo, invasive (pneumococcal)
Lab Section/Phone:	Clinical Microbiology 803 – 896 - 0805
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Pure isolate on a Chocolate or Blood agar slant
Specimen Identification:	Isolate must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Isolate should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	*S. pneumoniae* isolates from sterile sites on Children < 5 years old for serotyping.
Form:	DHEC 1335 requisition mark, Organism for ID
Special Instructions:	Testing for invasive cases <5 years of age ONLY.
Packing and Shipping*:	May use state courier for overnight delivery
Transport Conditions:	Store in 35°C CO2 incubator and Ship at room temperature.
Specimen Rejection Criteria:	Patient age > 5 years old. For universal rejections, See **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	Monday - Friday
Results and Interpretations:	N/A
Additional Information:	Specimen submission to the PHL is required for *Streptococcus pneumoniae*, invasive in cases < 5 years of age. Shipped to Wisconsin State Laboratory of Hygiene (WSLH) for serotyping by PCR.
Purpose of Test:	Submission required for epidemiologic surveillance.
Method:	PCR
Interfering Substances:	N/A
Comment:	N/A

Test	SYPHILIS SEROLOGY SCREEN
Synonym:	Syphilis TP, Reverse-Algorithm, Treponemal
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday-Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	Serum
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	1.5 mL of serum
Specimen Volume (minimum):	1 mL of serum
Collect:	Serum-separator tube or serum. (Red top vacuum tubes may only be used if the sample is sent in within 24 hours or centrifuged and serum is removed from the clot and put into a different container/tube.) See Venipuncture procedure Section III, if needed.
Form:	DHEC 1332 Test #001, 002, 004 or Test #235 (All samples submitted to the PHL for syphilis testing will undergo the reverse-algorithm.)
Special Instructions:	N/A
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	If sample will not be received within 24 hours, refrigerate and ship on a cold pack. Specimen must arrive within 3 days of collection.
Specimen Rejection Criteria:	Plasma specimen; more than 24 hours old. For universal rejections, see **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	Monday-Friday
Results and Interpretations:	Reactive, Nonreactive, or Indeterminate
Additional Information:	Reactive Syphilis TP samples will automatically be reflexed for RPR testing. If the RPR is nonreactive, the sample will be automatically reflexed for manual TP-PA testing. See "Guidance from the APHL Reverse Syphilis Serologic Testing Algorithm" in Section VII "Diagnostic Serology Quick Reference Guide"
Purpose of Test:	The qualitative detection of antibodies (IgG and IgM) directed against Treponema pallidum (TP) in human serum.
Method:	Chemiluminescent microparticle immunoassay (CMIA)
Interfering Substances:	Assay interference due to circulating antibodies against yaws, pinta, and bejel has not been evaluated. Cross-reactivity with these treponemal disease conditions is to be expected.
Comment:	RPR and Quantitation performed on positives.

Test	TP-PA SEROLOGY
Synonym:	MHA-TP, Treponemal Antibody Serology
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday-Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	Serum
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	1 mL of serum
Specimen Volume (minimum):	0.5 mL of serum
Collect:	Serum-separator tube or serum. (Red top vacuum tubes may only be used if the sample is sent in within 24 hours or centrifuged and serum is removed from the clot and put into a different container/tube.)
Form:	DHEC 1332
Special Instructions:	N/A
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Stable for 24 hours at room temperature. If the sample will not be received at the laboratory within 24 hours, refrigerate and ship cold. Sample must be received within 72 hours from the date of collection.
Specimen Rejection Criteria:	Plasma specimen; more than 24 hours old if it was not refrigerated and sent on a cold pack. Grossly contaminated, grossly lipemic, excessively hemolyzed, or chylous. For universal rejections, see **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	Monday-Friday
Results and Interpretations:	Reactive, Nonreactive, or indeterminate Not a screening test; Reactive test is usually reactive for life (85% of cases). Samples are reflexed for TP-PA testing only if the initial Syphilis TP is reactive and the RPR is non-reactive.
Additional Information:	N/A
Purpose of Test:	An aid to resolve discrepant results between screening treponemal (Syphilis TP) and nontreponemal (RPR) test results.
Method:	Particle Agglutination
Interfering Substances:	N/A
Comment:	N/A

Test	TRACE HEAVY METALS IN URINE
Synonym:	Urine Metals
Lab Section/Phone:	Analytical Chemistry, 803-896-0886
Days Performed:	As requested
Turnaround Time:	10 Days
Specimen Required:	Urine
Specimen Identification:	Specimen container must be labelled with patient's full name, and a second patient identifier such as DOB, Specimen #, etc. DHEC requisition must be completed in full.
Specimen Volume (optimum):	2-5 mL
Specimen Volume (minimum):	500 µL
Collect:	Sterile urine cups
Form:	DHEC 1332, Test #885
Special Instructions:	N/A
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	In general, urine specimens should be transported frozen (packed in dry ice during shipment is preferred, when possible). If shipment is delayed, urine specimens should be stored frozen.
Specimen Rejection Criteria:	Insufficient quantity (QNS); improper collection container. For universal rejections, see **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	Monday – Friday
Results and Interpretations:	N/A
Additional Information:	Trace Heavy Metals includes Arsenic (As), Barium (Ba), Beryllium (Be), Cadmium (Cd), Lead (Pb), Thallium (Tl), Uranium (U)
Purpose of Test:	Identify exposure to As, Ba, Be, Cd, Pb, Tl, and/or U
Method:	Inductively Coupled Plasma Mass Spectrometry
Interfering Substances:	N/A
Comment:	N/A

Test	TRICHOMONAS VAGINALIS DETECTION BY NUCLEIC ACID AMPLIFICATION
Synonym:	Hologic Trichomonas vaginalis Amplified Nucleic Acid Test (NAAT), Trichomonas vaginalis rRNA, Aptima TV
Lab Section/Phone:	Diagnostic Serology, 803-896-0811
Days Performed:	Monday-Friday
Turnaround Time:	1-5 Business Days
Specimen Required:	The assay may be used to test the following specimens from symptomatic or asymptomatic female patients: · Unisex swab (blue shafted swab) for endocervical specimens · MTS swab (also known as the orange/coral vaginal swab) for vaginal specimens · Urine transport tube for female urines · Male samples: Urine transport tube ONLY
Specimen Identification:	Samples must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. DHEC requisition must be completed in full.
Specimen Volume (optimum):	Urine should be collected up to the "fill area" lines. Swab collection kits should contain the adequate amount of transport media for testing.
Specimen Volume (minimum):	Urine should be collected up to the "fill area" lines. Swab collection kits should contain the adequate amount of transport media for testing.
Collect:	Only use Gen-Probe Aptima Specimen Collection Kits. See Special Instructions for more information.
Form:	DHEC 1332
Special Instructions:	Only use Gen-Probe Aptima Specimen Collection Kits. Female and male urine specimens: Patient should not have voided within one hour of collection. Collect first 20-30 ml of the first-catch urine stream into collection cup. Transfer 2 ml of urine into Aptima Urine Specimen Transport tube so that the urine level falls within the two lines on the transport tube labeled: "fill area". (Yellow Label). See GC/Chlamydia Gen-probe Collection Procedure, Section III. Male testing will ONLY be performed on urine specimens.
Packing and Shipping*:	See **Transporting and Shipping Infectious Substances in Section IV.**
Transport Conditions:	Store and ship at room temperature or on ice packs. Swab specimens must be tested within 60 days of collection. Urine specimens should be tested within 30 days of collection (urine must be transferred to the Urine Collection Tubes within 24 hours).
Specimen Rejection Criteria:	Specimen with no swab in transport media; white swab in transport media; two swabs in transport media; urine above or below designated black lines on transport tube labeled fill area; swab specimen more than 60 days old, or urine specimen more than 30 days old. For universal rejections, see **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	Monday-Friday
Results and Interpretations:	Positive or Negative
Additional Information:	Vaginal samples collected in the Aptima Unisex Swab Collection Kit will be disclaimed as not FDA approved for this type of specimen. Performance of the vaginal swab has not been evaluated in women less than 14 years of age.
Purpose of Test:	For the detection and aid in the diagnosis of trichomoniasis.
Method:	Nucleic acid amplification test(NAAT)
Interfering Substances:	N/A
Comment:	N/A

<table>
<tr><th>Test</th><th>VARICELLA VIRUS SEROLOGY (IgG)</th></tr>
<tr><td>Synonym:</td><td>Chickenpox, Varicella zoster virus</td></tr>
<tr><td>Lab Section/Phone:</td><td>Virology & Rabies, 803-896-0819</td></tr>
<tr><td>Days Performed:</td><td>N/A</td></tr>
<tr><td>Turnaround Time:</td><td>N/A</td></tr>
<tr><td>Specimen Required:</td><td>Serum</td></tr>
<tr><td>Specimen Identification:</td><td>Patient’s full name and patient ID # (or other unique identifier) is required on the specimen and requisition.</td></tr>
<tr><td>Specimen Volume (optimum):</td><td>2 mL serum</td></tr>
<tr><td>Specimen Volume (minimum):</td><td>1 mL serum</td></tr>
<tr><td>Collect:</td><td>Serum Separator vacuum tube (SST), centrifuged appropriately. (Red top vacuum tubes may be used if the sample is centrifuged and serum is removed from the clot and put into a different container/tube.) Please follow manufacturer’s guidelines. See Specimen Collection: Venipuncture Procedure in Section III if needed.</td></tr>
<tr><td>Form:</td><td>DHEC 1332</td></tr>
<tr><td>Special Instructions:</td><td>N/A</td></tr>
<tr><td>Packing and Shipping*:</td><td>See Transporting and Shipping Infectious Substances in Section IV.</td></tr>
<tr><td>Transport Conditions:</td><td>Store and ship at room temperature.</td></tr>
<tr><td>Specimen Rejection Criteria:</td><td>See Specimen Rejection & Disclaimer Criteria in Section I.</td></tr>
<tr><td>Availability:</td><td>Testing performed once per week</td></tr>
<tr><td>Results and Interpretations:</td><td>Immune status: Positive, Negative or Equivocal</td></tr>
<tr><td>Additional Information:</td><td>
<table>
<tr><th>Result</th><th>Interpretation</th></tr>
<tr><td>Positive</td><td>Indicates IgG antibodies to Varicella virus were detected. A positive test result indicates a current or previous infection with Varicella virus, or prior vaccination against Varicella virus.</td></tr>
<tr><td>Equivocal</td><td>Re-evaluate by collecting and testing another sample.</td></tr>
<tr><td>Negative</td><td>Indicates no detectable IgG antibodies to the Varicella virus. A non-reactive result indicates no current or previous infection with Varicella virus. Such patients are presumed to be non-immune and are therefore susceptible to a primary infection. A non-reactive result may be obtained early in seroconversion of infected individuals. If this is suspected, collect and test another specimen in 8-14 days.</td></tr>
</table>
</td></tr>
<tr><td>Purpose of Test:</td><td>To detect Varicella zoster virus IgG antibodies for determining immune status.</td></tr>
<tr><td>Method:</td><td>EIA (Enzyme Immunoassay)</td></tr>
<tr><td>Interfering Substances:</td><td>N/A</td></tr>
<tr><td>Comment:</td><td>N/A</td></tr>
</table>

Test	VARIOLA
Synonym:	Small Pox
Lab Section/Phone:	Special Pathogens / Daytime - (803) 896-0777 or Evenings - (803) 767-8118
Days Performed:	As needed
Turnaround Time:	48 hours
Specimen Required:	Clinical samples
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	Determined during Special Pathogens Laboratory notification.
Specimen Volume (minimum):	Determined during Special Pathogens Laboratory notification.
Collect:	Determined during Special Pathogens Laboratory notification.
Form:	DHEC 1335; Test Number 521; check "Other- (Variola)" DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	**Pre-approval Needed - Hospitals must obtain approval from the DHEC health department prior to submitting specimens to the Special pathogens Laboratory. Contact information can be located on the back of the *List of Reportable Conditions*. Contact the Special Pathogens Laboratory (803-896-0777 / 803-767-8118) for test notification, specimen collection, storage conditions, and shipping conditions/methods.**
Packing and Shipping*:	Special handling criteria apply. Please contact the laboratory for special instructions at 803-896-0777 / 803-767-8118.
Transport Conditions:	Determined during Special Pathogens Laboratory notification
Specimen Rejection Criteria:	Determined during Special Pathogens Laboratory notification
Availability:	As needed
Results and Interpretations:	- Final results are verbally communicated to the sender to ensure correct interpretation. Final reports are provided via fax or e-mail. - The definitive identification of *Variola* virus requires additional testing to be performed by CDC.
Additional Information:	Variola Virus is designated as a Tier 1 Select Agent (Select Agent Regulation, 42 CFR, 73, Final Rule). In the event of *Variola* detection, the Special Pathogens Laboratory will assist the sender in the timely submission of the required federal documentation.
Purpose of Test:	To presumptively detect *Variola* DNA in clinical samples
Method:	CDC/LRN Real Time PCR Assay
Interfering Substances:	N/A
Comment:	Please call the Special Pathogens Laboratory with any questions or concerns.

Test	VIBRIO, all types, including *Vibrio cholerae* O1 and O139
Synonym:	N/A
Lab Section/Phone:	Clinical Microbiology 803-896-0803
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Isolate or stool collected in stool transport medium.
Specimen Identification:	Specimen container and Isolates must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container or isolates should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full.
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	Pure isolate subbed to agar slant that will support growth. Stool in transport medium such as Cary Blair and Para Pak.
Form:	DHEC 1335 requisition mark Organism for ID for isolates and Enteric culture for stool in transport medium.
Special Instructions:	N/A
Packing and Shipping*:	See Packing and Shipping Instructions in Section IV. May use state courier for overnight delivery.
Transport Conditions:	Ship isolates at room temperature. Stool in transport medium ship on cold packs and in insulated shippers.
Specimen Rejection Criteria:	For universal rejections, see **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	Monday - Friday
Results and Interpretations:	N/A
Additional Information:	Specimen submission to the Public Health Laboratory (PHL) is required. Ship +PCR specimens ASAP to promote recovery. Ship isolates within 3 business days.
Purpose of Test:	N/A
Method:	bioMerieux VITEK MS, conventional biochemicals, serotyping
Interfering Substances:	N/A
Comment:	N/A

<table>
<tr><th>Test</th><th>WEST NILE VIRUS SEROLOGY- IgM</th></tr>
<tr><td>Synonym:</td><td>Arbovirus Serology</td></tr>
<tr><td>Lab Section/Phone:</td><td>Virology & Rabies, 803-896-0819</td></tr>
<tr><td>Days Performed:</td><td>N/A</td></tr>
<tr><td>Turnaround Time:</td><td>15 days</td></tr>
<tr><td>Specimen Required:</td><td>Cerebrospinal fluid (CSF) or Serum</td></tr>
<tr><td>Specimen Identification:</td><td>Patient’s full name and patient ID # (or other unique identifier) is required on the specimen and requisition.</td></tr>
<tr><td>Specimen Volume (optimum):</td><td>CSF: 2 mL
Serum: 2 mL</td></tr>
<tr><td>Specimen Volume (minimum):</td><td>CSF: 1 mL
Serum: 1 mL</td></tr>
<tr><td>Collect:</td><td>Serum Separator vacuum tube (SST), centrifuged appropriately. (Red top vacuum tubes may be used if the sample is centrifuged and serum is removed from the clot and put into a different container/tube.) Please follow manufacturer’s guidelines. See Specimen Collection: Venipuncture Procedure in Section III if needed.
Sterile, leak-proof, screw-capped container for CSF.</td></tr>
<tr><td>Form:</td><td>DHEC 1332</td></tr>
<tr><td>Special Instructions:</td><td>N/A</td></tr>
<tr><td>Packing and Shipping*:</td><td>See Transporting and Shipping Infectious Substances in Section IV.</td></tr>
<tr><td>Transport Conditions:</td><td>CSF must be shipped cold within 24 hours. After 24 hours, ship frozen on dry ice. Serum may be shipped at room temperature or on cold packs.</td></tr>
<tr><td>Specimen Rejection Criteria:</td><td>See Specimen Rejection & Disclaimer Criteria in Section I.</td></tr>
<tr><td>Availability:</td><td>N/A</td></tr>
<tr><td>Results and Interpretations:</td><td>
<table>
<tr><th>Result</th><th>Interpretation</th></tr>
<tr><td>Positive</td><td>Indicates IgM antibodies to West Nile virus were detected.</td></tr>
<tr><td>Negative</td><td>Indicates no detectable IgM antibodies to West Nile virus.</td></tr>
<tr><td>Equivocal</td><td>Collect and submit another sample for testing.</td></tr>
<tr><td>Unable to Interpret</td><td>Non-specific interference. Unable to interpret.</td></tr>
</table>
</td></tr>
<tr><td>Additional Information:</td><td>Positive specimens will be referred to CDC for additional testing.</td></tr>
<tr><td>Purpose of Test:</td><td>To detect IgM antibodies for the West Nile virus to determine a current infection.</td></tr>
<tr><td>Method:</td><td>EIA (Enzyme Immunoassay)</td></tr>
<tr><td>Interfering Substances:</td><td>N/A</td></tr>
<tr><td>Comment:</td><td>N/A</td></tr>
</table>

Test	YERSINIA ENTERCOLITICA
Synonym:	*Y. enterocolitica*
Lab Section/Phone:	Clinical Microbiology 803-896-0805
Days Performed:	Monday - Friday
Turnaround Time:	10 business days
Specimen Required:	Walnut sized portion of feces or 5-10ml of liquid stool in stool transport medium. Infant specimens may be collected in a disposable diaper with outside facing in. Submit referred isolate on agar slant in a screw capped tube.
Specimen Identification:	Specimen container or Isolate must be labelled with patient's first and last name, and a second patient identifier such as DOB, MCI #, Specimen #. Specimen container and Isolate should have the date of isolate or collection, and initials of the person collecting the sample. DHEC requisition must be completed in full
Specimen Volume (optimum):	N/A
Specimen Volume (minimum):	N/A
Collect:	N/A
Form:	DHEC 1335 requisition, mark Enteric Culture or Organism for ID
Special Instructions:	N/A
Packing and Shipping*:	See Packing and Shipping Instructions in Section IV. May use state courier for overnight delivery.
Transport Conditions:	Store specimen in refrigerator. Ship stool preserved in Cary-Blair or Para-Pak transport medium on cold packs shipped in insulated shippers. Ship slants at room temperature.
Specimen Rejection Criteria:	Quantity insufficient; specimen too old; improper transport media or conditions. For universal rejections, see **Specimen Rejection & Disclaimer Criteria in Section I.**
Availability:	Monday - Friday
Results and Interpretations:	N/A
Additional Information:	*Yersinia enterocolitica* testing is available for outbreaks as determined by the SC DHEC Division of Acute Disease Epidemiology.
Purpose of Test:	N/A
Method:	bioMerieux, Vitek MS
Interfering Substances:	N/A
Comment:	N/A

Test	YERSINIA PESTIS
Synonym:	Bubonic Plague
Lab Section/Phone:	Special Pathogens / Daytime - (803) 896-0777 or Evenings - (803) 767-8118
Days Performed:	As needed
Turnaround Time:	7 to 10 days from the time of sample receipt in the laboratory.
Specimen Required:	Clinical Samples / isolates
Specimen Identification:	Specimens should be labeled with patient's first and last name, DOB, MCI # or other unique ID #, date and time of collection, initials of the person collecting the sample, and the specimen source.
Specimen Volume (optimum):	Determined during pre-approval consultation.
Specimen Volume (minimum):	Determined during pre-approval consultation.
Collect:	Determined during pre-approval consultation.
Form:	DHEC 1335; Test Number 520; "Suspect Agent" = *Yersinia pestis* DHEC requisition must be completed in full and should include the Date of birth and a second patient identifier (ex. Local ID or Clinical ID), the date of isolate / collection, and initials of the person collecting the sample.
Special Instructions:	Specimen must be pre-approved by Special Pathogens Supervisor prior to testing.
Packing and Shipping*:	Special handling criteria apply. Please contact the laboratory for special instructions at 803-896-0777 / 803-767-8118.
Transport Conditions:	Determined during pre-approval consultation.
Specimen Rejection Criteria:	Determined during pre-approval consultation.
Availability:	As needed
Results and Interpretations:	Preliminary (when applicable) and final results are verbally called to the sender to ensure correct interpretation. Final reports are provided via fax or e-mail.
Additional Information:	*Yersinia pestis* is designated as a Tier 1 Select Agent (Select Agent Regulation, 42 CFR, 73, Final Rule). In the event of *Yersinia pestis* detection, the Special Pathogens Laboratory will assist the sender in the timely submission of the required federal documentation.
Purpose of Test:	To detect *Y. pestis* in clinical samples / To confirm referred isolates
Method:	A variety of sentinel and LRN methods are used to grow, isolate, confirm, and rule-out bacterial isolates.
Interfering Substances:	N/A
Comment:	Please call the Special Pathogens Laboratory with any questions or concerns.

SECTION III

ORDERING SUPPLIES
And
SPECIMEN COLLECTION

ORDERING SUPPLIES/FORMS/SHIPPING CONTAINERS

The Public Health Laboratory will provide request forms, kits, media and shipping containers for the collection and shipping of laboratory specimens. These supplies are provided free of charge. Please use them judiciously and use **ONLY** to send laboratory specimens to the Public Health Laboratory, SCDHEC, 8231 Parklane Road, Columbia, SC 29223. Supplies may be obtained by completing and submitting the **DHEC 1323 form**, "Request for Laboratory Supplies". Email PHL-Supply@dhec.sc.gov to request the 1323 form. An electronic fillable form will be sent by email. Return the completed DHEC 1323 form by email to PHL-Supply@dhec.sc.gov. Be sure to provide the sender number, so that the requested supplies are sent to the intended location. A confirmation email will be sent after receipt of the completed DHEC 1323 form. The Supply Section can be reached at (803) 896-0913, if needed.

COLLECTION KITS

These kits contain collection materials and a requisition form. Each kit is to be used for only one specimen.

Enteric kit (for Bact. Culture)
Influenza kit
Mycobacteriology (collection kit for TB)
Pink Label
Insulated Shipper
Yellow Label

TRANSPORT MEDIUM

(Order request forms and shipping container separately.)

GC Culture medium
Cary Blair Media
Viral Transport Media

OTHER SUPPLIES

Absorbent Packs
Biohazard Bags
Envelopes (for Newborn Screening and Hb electrophoresis blood spots)
GC/Chlamydia/Trichomonas (for Antigen Detection) Unisex swab, MTS (Multitest) swab, also known as the orange/coral vaginal swab), or urine collection kit
PPT Tubes for Viral Load
QuantiFERON-TB Gold Plus (QFT Plus) Tubes

SHIPPING CONTAINERS

(for shipping infectious specimens)

Commercial carriers must use special approved mailing containers. These are distributed for PHL use ONLY and will be returned to senders for re-use.

Shipping Containers

Infecon 3000
Infecon 5000
Infecon 5500
Category A Cold Shipper
Rabies Container

REQUEST FORMS

The request forms provided by the Public Health Laboratory are listed below. Forms marked with a + will be pre-addressed with your name, address and sender number. Since an over-supply cannot be returned to stock, please use discretion in the number you request. **DO NOT LOAN OR BORROW** pre-printed forms to another client. The pre-printed sender number determines where result reports are mailed or made available to electronically. Forms are periodically revised. Please discontinue use of old forms once a revision has been made.
A separate DHEC 1323 form (Request for Laboratory Supplies) must be submitted for each location requesting supplies, using its unique sender number.

Form #	Test (revision date)	Form color
1308	+Rabies	White
1323	Request for Lab Supplies	N/A (Electronic form)
1327	Newborn Screening **(check expiration date on form)**	White with green lettering
1332	+GC/ Chlamydia Screening	White
1332	+Hematology	White
1332	+ HIV Hepatitis /Syphilis Serology	White
1332	+Immunology	White
1332	+Lead Analysis	White
1332	+Lymphocyte Subset Panel	White
1332	+Serum Chemistry	White
1335	+Bacteriology	White
1335	+ Molecular	White
1335	+Mycobacteriology	White (Included in kit)
1335	+Parasitology	White
1335	+Virus Isolation/Herpes	White
1339	Hemoglobin Electrophoresis	Lt. Green

+Preaddressed

SC DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
PUBLIC HEALTH LABORATORY
8231 Parklane Road Columbia, SC 29223
(803) 896-0800
CLIA # 42D0658606

Date Received
PHL Specimen Number

Patient's Name (Last)	(Suffix)	(First)	(MI)	Sex	Ethnicity	Race	Date of Birth MO / DAY / YR

Address	City	State	Zip Code	County of Residence	Miscellaneous

MCI Number (CHD CLIENTS ONLY)	Local ID	Clinic ID	Program Number	Country of Birth	Phone Number

Sender Number	Billing Number	Travel History

Sender Address

REASON FOR VISIT/TEST *(Check all that apply)*

__01 Volunteer/Medical
__02 Prev. Health - New
__03 Prev. Health - Established
__04 Contact
__06 Other_____
__08 Follow-Up
__09 Prev. Health - Brief
__10 Special Project
__11 Contact-HIV Positive
__12 Contact-Syphilis
__13 Referred -Self
__14 Referred-Other _____
__15 Workplace Exposure
__16 Diagnosis
__17 Repeat Test/First Test ____
__18 Routine Screen
__19 Test of Cure
__24 Rapid HIV Test Positive
__26 Contact-Hepatitis A
__27 Contact-Hepatitis B
__28 Contact-Hepatitis C
__33 Premarital (State____)
__34 Contact-HIV / PT notified
__35 Contact-HIV/ HD/MD notified
__37 Rapid HCV Positive
__38 Rapid HCV Negative
__39 Referred by Drug Trtmnt Ctr
__40 Previous HIV Positive
__42 Self-Report (Date_____)
__43 Pregnancy Test
__44 Contact-Gonorrhea
__45 Contact-Chlamydia
__46 Fast Track Services
__47 Fast Track Ineligible

SPECIMEN INFORMATION

Collection Date MO / DAY / YR
Collection Time __AM __PM
Initial ( )

Specimen Type/Source
___Blood
__Acute __Convalescent
__07 Finger; Heel; Toe Stick
__61 Plasma
__02 Serum/Serum-Separator
__01 Whole
_41 Venipuncture*
_51 EDTA-Lavender/Purple
_62 Clotted
___03 CSF
*Blood Lead Samples ONLY

___Swab
_53 Cervical
_16 Urethral
_57 Vaginal
___17 Rectal
___13 Throat
___98 Unknown
___04 Urine
___99 Other

CHLAMYDIA TEST

Pregnancy Status ___Yes ___No ___Unknown
Symptoms ___Yes ___No ___Unknown
Risk ___New Partner ___Multiple Partner

RISK HISTORY (Circle all that apply)

Past 12 months:
Client: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 31 32 33
Partner: 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

SEROLOGY TEST SYMPTOMS

Outbreak Number:_____ Date of onset:_____

Fever (temp)	Duration	Rash (type)

Please circle all that apply

Conjunctivitis	Headache	Muscle Weakness	Pharyngitis
Constipation	Jaundice	Nuchal rigidity	Pneumonia
Cough	Lethargy	Paralysis	Rhinitis
Diarrhea	Myocarditis	Pericarditis	Vomiting

ORDERING PHYSICIAN, PROVIDER AND/OR NURSE:

SPECIAL INSTRUCTIONS and/or COMMENTS:

TEST REQUESTED

SERUM CHEMISTRY
Patient: ___Fasting ___Non-Fasting

___713 ALT/AST
___715 TB Panel

HEMATOLOGY
Ship at room temperature

___760 CBC Panel
___780 CD4 (T4 Count)
___Initial Test
___Repeat Test

TOXIC CHEMICALS
*Individual metals upon request
___882 Hg, Pb, Cd screen in blood
___852 Lead (Blood)
___885 Trace Heavy Metal Urine Screen (Includes As, Be, Cd, Ba,Tl, Pb, U)*

VIROLOGY

___118 Chikungunya IgM
___119 Dengue IgM
___135 Mumps IgG
___136 Mumps IgM
___005 Rubella IgG
___006 Rubella IgM
___132 Rubeola (Measles) IgG
___111 Rubeola Measles) IgM
___110 Varicella IgG
___117 West Nile IgM
___120 Zika IgM

GC/CT DETECTION

___504 Trichomonas vaginalis -rRNA
___505 GC –rRNA
___506 Chlamydia -rRNA
___507 GC and Chlamydia –rRNA
___514GC/Chlamydia/Trich. vaginalis- rRNA

PHL USE ONLY

SEROLOGY

___019 Hepatitis A, IgG
___020 Hepatitis A, IgM
___226 Hepatitis B Anti-Core
___220 Hepatitis B Core IgM Antibody
___223 Hepatitis B Diagnostic Profile
___222 Hepatitis B Immune Status/Post Imm.
___228 Hepatitis B Surface Antibody
___225 Hepatitis B Surface Antigen
___224 Hepatitis C Antibody (HCV)
___227 Hepatitis C RNA
___230 HIV-1/HIV-2
___235 HIV-1/HIV-2 & RPR
___234 HIV-1/2 & Geenius
___231 HIV-1 Quant. RNA
___001 Syphilis RPR
___004 Syphilis-if RPR Pos do TP-PA
___002 TP-PA
___ _____
___ _____

DHEC 1332 (Revised 4/2018)

Revised 8/2020

INSTRUCTIONS FOR COMPLETING REQUEST FORM

(May use printed patient lab label)

1. Enter patient name.
2. Write M = Male; F = Female or TX = Transgender M2F (Male to Female); or TY = Transgender F2M (Female to Male) in Sex box.
3. Enter ethnicity as follows: H = Hispanic/Latino, N = Non-Hispanic/Latino and U = Unknown
4. Enter race as follows: A = Asian; B = Black/African American; W= White; I = American Indian/Alaskan Native; P = Native Hawaiian/Other Pacific Islander; O= Other; U = Unknown/Unclassified
5. Enter date of birth (month, day and year. Example: Enter 03/06/1960 for the birthday March 6, 1960.)
6. Enter the patient address and five-digit zip code.
7. Enter county of residence and the 10-digit telephone number.
8. Fill in patient MCI ID number (DHEC Clients only).
9. Enter local and clinic ID if applicable. (Private clients must provide a clinic ID)
10. Enter Program number.
11. Enter Country of Birth.
12. Enter billing number if billing number is different from sender number
13. Enter Country of Birth.
14. Enter Travel History.
15. Enter the date and time of collection and initial.
16. Check type/source of specimen.
17. Enter Ordering Physician, Provider and/or Nurse if applicable. **Note: Please print.**
18. In the Reason for Visit/Test box, check all that apply.
19. Chlamydia test: Check pregnancy status, risk, and symptom.
20. Use the codes below to identify client and partner Risk Factors during the **PAST 12 MONTHS**. (Circle all that apply)

CLIENT RISK	**1.** Sex w/Female (F) **2.** Sex w/Male (M) **3.** Sex w/Transgender (T) **4.** Injection Drug Use (IDU) **5.** Used non-injectable drug or alcohol anytime during past 12-months **Received drugs/money in exchange for sex with a:** **6.** F/partner **7.** M/partner **8.** T/partner **Had sex while high on drugs with a:** **9.** F/partner **10.** M/partner **11.** T/partner **12.** Child of HIV infected mother **13.** Refused **14.** Other **31.** Without Condom **32.** Oral Sex w/Female **33.** Oral sex w/Male
PARTNER RISK	**Client had sex with:** **15.** F/IDU **16.** F/HIV + **17.** F/of unknown status **18.** F/who exchanges sex for drugs/money **19.** F/who has transfusions/transplant recipient **20.** M/IDU **21.** M/HIV + **22.** M/who exchanges sex for drugs/money **23.** Person who is a known MSM **(for female clients only)** **24.** M/of unknown status **25.** M/who has transfusions/transplant recipient **26.** T/IDU **27.** T/HIV + **28.** T/of unknown status **29.** T/who exchanges sex for drugs/money **30.** T/who has transfusions/transplant recipient

21. Enter the Outbreak Number.
22. Enter Date of Onset if applicable and circle all symptoms that apply.
23. Mark test requested.
24. Send top 2 copies of the form with the specimen(s) to the lab. **Please Retain Third Copy For Your Records.**

TB PANEL

Alkaline Phosphatase
ALT
AST
BUN
Creatinine
Glucose
T Bilirubin
Uric Acid
BUN/Creatinine Ratio* (Calculated values)

DHEC 1332 (4/2018)

SC DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
PUBLIC HEALTH LABORATORY
8231 Parklane Road Columbia, SC 29223
(803) 896-0800
CLIA # 42D0658606

Date Received
PHL Specimen Number

Patient's Name (Last)	(Suffix)	(First)	(MI)	Sex	Ethnicity	Race	Date of Birth MO / DAY / YR

Address	City	State	Zip Code	County of Residence	Phone Number

MCI Number (CHD CLIENTS ONLY)	Local ID	Clinic ID	Program Number	Country of Birth

Sender Number	Billing Number	Outbreak #

Sender Address

ORDERING PHYSICIAN, PROVIDER AND/OR NURSE:

Special Instructions and/or Comments:

SPECIMEN INFORMATION

Collection Date MO	DAY	YR	Collection Time	Initial
			__AM __PM	( )

Date of Onset: _____/_____/_____

Agents/Organisms/or Virus suspected:

Clinical Diagnosis:

Specimen Type/Source

__ 07 BAL
__ 01 Blood
__ 28 Bronchial wash
__ 03 CSF
__ 14 Eye
__ 10 Feces
__ 34 Fluid _____ specify
__ 23 Genital _____ specify
__ 52 Nasopharyngeal Swab
__ 60 Sinus _____ specify
__ 65 Smear* _____ specify
__ 08 Sputum
__induced
__spontaneous
__ 13 Throat Swab
__ 12 Tissue/Biopsy _____ specify
__ 04 Urine
__ 32 Wound/Pus/Drainage
__ 33 Enteric Transport Media
__ 34 Test of Cure
__ 99 Other _____ specify
*Do not mark for TB samples

SYMPTOMS

__ Asymptomatic __Encephalitis __Pleurodynia
__Arthralgia/Myalgia __Fever __Rash _____ Type
__Conjunctivitis __Meningitis __Respiratory
__Diarrhea __Nausea/Vomiting __Other:_____

TEST REQUESTED

CLINICAL MICROBIOLOGY (BACTERIOLOGY)

Was culture incubated before Transport: ___No ___Yes: __24 hrs. __48 hrs.

__501 GC Culture & ID
__502 Culture/Isolate for Shiga toxin producing E. coli
__503 Broth/Specimen for Shiga toxin producing E. coli
__508 Enteric Culture
__510 Non-Enteric Culture & ID
__511 Organism for ID- aerobic
__512 Legionella Urine Antigen Test
__513 BioFire FilmArray GI panel
__515 CRE/CRPA/CRAB
List organism_____
__Other _____ specify

VIROLOGY

SHIP ALL SPECIMENS FOR ISOLATION COLD

__114 Norovirus Detection by RT-PCR
__115 Bordetella Multiplex by RT-PCR
__121 GI Outbreak
__250 Herpes Culture (_____ Disease Active)
__270 Routine Viral Culture
__271 Influenza RT-PCR
__273 Mumps RT-PCR
__274 Measles RT-PCR
__275 CDC Trioplex RT-PCR
__276 BioFire Respiratory Panel *(outbreak investigations only)*

MYCOBACTERIOLOGY

__601 Clinical Specimen for ID and smear
__602 Isolate for ID
__604 Drug Susceptibility
__Clinical Specimen
__Referred Isolate
__605 QuantiFeron TB-Gold
Incubation: start time _____
end time _____

Known TB case? Y N
R/O new TB case? Y N
Suspicious hx, s/sx? Y N
Current Rx? Y N

SPECIAL PATHOGENS

__520 Rule-out Testing: __Bacterial Isolate
__Clinical Specimen
Suspect Agent:_____
__521 Molecular Testing for Viral Agents:
__Influenza A: H5/H7 __MERS
__Ebola __Other
__522 Serological Testing:
__BMAT __Malaria

MOLECULAR

__120 PFGE Subtyping

__ Other _____ Specify

CLINICAL MICROBIOLOGY (PARASITOLOGY)

__406 Cryptosporidium Antigen
__410 Other _____ Specify

PHL USE ONLY

DHEC 1335 (4/2018)

Revised 8/2020

INSTRUCTIONS FOR COMPLETING REQUEST FORM
DHEC 1335

(May use printed patient lab label)

1. Enter patient name.
2. Write M = Male; F = Female or TX = Transgender M2F (Male to Female); or TY = F2M (Female to Male) in Sex box.
3. Enter ethnicity as follows: H = Hispanic/Latino and N = NonHispanic/Latino.
4. Enter race as follows: A = Asian
   B = Black/African American
   W= White
   I = American Indian/Alaskan Native
   P = Native Hawaiian/ Other Pacific Islander
   O= Other
   U = Unknown/Unclassified
5. Enter date of birth (month, day and year.) Example: enter 03/06/1960 for the birthday March 6, 1960.
6. Enter the patient address and five-digit zip code.
7. Enter county of residence and the 10-digit telephone number.
8. Fill in patient MCI ID number (DHEC Clients only).
9. Enter local and clinic ID if applicable. (Private clients must provide a clinic ID)
10. Enter Program number.
11. Enter Country of Birth.
12. Enter billing number if billing number is different from sender number.
13. Enter the Outbreak number.
14. Enter the date and time of collection and initial.
15. Check type/source of specimen.
16. Enter Ordering Physician, Provider and/or Nurse if applicable. **Note: Please print.**
17. Enter in the Special Instructions and/or comments where you vacated (travel history).
18. Enter Date of Onset if applicable.
19. List agents, organisms, or virus suspected.
20. Enter clinical diagnosis.
21. Check symptoms that apply.
22. Mark test requested.
23. Answer the four questions in Mycobacteriology Section.
24. Send top two copies of the form with the specimen(s) to the lab. PLEASE RETAIN THIRD COPY FOR YOUR RECORDS.

DHEC 1335 (4/2018)

DHEC 1335 Submission Form

DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
Public Health Laboratory
8231 Parklane Road Columbia, SC 29223
(803) 896-0800

CLIA#42D0658606

ALIGN BARCODE LABEL TO TOP OF BOX

Patient's Name (Last)	(First)	(MI)	Sex	Ethnicity	Race	Date of Birth

Address	City	State	Zip Code	County of Residence

Phone Number	Country of Birth	MCI Number	Local ID	Clinic ID

Sender No.	Sender Name	Billing Number	Program No.	Outbreak Number

Ordering Physician, Provider and/or Nurse:	Clinical Diagnosis

Special Instructions and/or Comments:

Specimen Information			Date of Onset	Agents/Organisms/or Virus Suspected
Collection Date:	**Collection Time:**	☐AM ☐PM		

Specimen Type/Source

- ☐ Blood/Serum
- ☐ Bronchial wash
- ☐ Nasopharyngeal Swab
- ☐ Smear (Do not mark for TB)
- ☐ Stool specimens
- ☐ Throat swab
- ☐ Urine
- ☐ Wound pus drainage
- ☐ BAL
- ☐ Swab _____
- ☐ Genital _____
- ☐ Tissue/Biopsy _____
- ☐ Other _____

Mycobacteriology Specimens
- ☐ Induced sputum
- ☐ Spontaneous sputum
- ☐ Other _____

Symptoms

- ☐ Arthralgia/Myalgia
- ☐ Asymptomatic
- ☐ Conjunctivitis
- ☐ Diarrhea
- ☐ Encephalitis
- ☐ Fever
- ☐ Meningitis
- ☐ Nausea/Vomiting
- ☐ Pleurodynia
- ☐ Rash Type: _____
- ☐ Respiratory
- ☐ Other

Test Requested

Clinical Microbiology (Bacteriology/Parasitology)

Was culture incubated before transport: ☐ Yes ☐ No ☐ 24 hours ☐ 48 hours

- ☐ Broth Specimen for Shiga toxin producing E. coli
- ☐ CRE/CRPA/CRAB
- ☐ Candida ID
- ☐ Cryptosporidium Antigen
- ☐ Culture/Isolate for Shiga toxin producing E. coli
- ☐ Enteric Culture
- ☐ GC Culture and ID
- ☐ Legionella Urine Antigen
- ☐ Non-Enteric Culture and ID
- ☐ Organism for ID-Aerobic
- ☐ Other _____

Mycobacteriology

Known TB case? ☐ Yes ☐ No | R/O new TB Case? ☐ Yes ☐ No | Suspicious hx, s/sx? ☐ Yes ☐ No | Current Rx? ☐ Yes ☐ No

- ☐ Clinical Specimen for ID and Smear
- ☐ Isolate for ID ☐ Blood Culture
- ☐ Drug Susceptibility:
- ☐ Clinical Specimen ☐ Referred Isolate
- ☐ Specimen for Genotyping

Virology

- ☐ BioFire Respiratory Panel (Outbreak Only)
- ☐ Bordetella (BioFire)
- ☐ GI Outbreak (Norovirus RT-PCR and/or Biofire GI panel)
- ☐ Influenza RT-PCR ☐ In-patient ☐ Out-Patient
- ☐ Herpes
- ☐ Measles RT-PCR
- ☐ Mumps RT-PCR
- ☐ Trioplex RT-PCR
- ☐ QuantiFeron TB-Gold Plus Incubation Start Time: End Time:

☐ COVID RT-PCR	Y	N	U		Y	N	U
First Test?	☐	☐	☐	Hospitalized?	☐	☐	☐
Employed in healthcare?	☐	☐	☐	ICU?	☐	☐	☐
Symptomatic (CDC defined)?	☐	☐	☐	Pregnant?	☐	☐	☐
Resident in a congregate care facility?					☐	☐	☐

Special Pathogens

Rule-out Testing	Molecular Testing for Viral Pathogens		Serological Testing
☐ Bacterial Isolate ☐ Clinical Specimen Suspect Agent: _____	☐ Avian Influenza	☐ Ebola	☐ BMAT
	☐ MERS	☐ Other	☐ Malaria

DHEC 1335-OE

INSTRUCTIONS FOR COMPLETING REQUEST FORM
DHEC 1335

(May use printed patient lab label)

1. Enter patient name.
2. Enter M = Male; F = Female; TX = Transgender M2F (Male to Female); or TY = F2M (Female to Male) in Sex box.
3. Enter ethnicity as follows: H = Hispanic/Latino and N = NonHispanic/Latino.
4. Enter race as follows: A = Asian; B = Black/African American; W= White; I = American Indian/Alaskan Native; P = Native Hawaiian/ Other Pacific Islander; O= Other; U = Unknown/Unclassified
5. Enter date of birth (month, day and year.) Example: enter 03/06/1960 for the birthday March 6, 1960.
6. Enter the patient address and five-digit zip code.
7. Enter county of residence and the 10-digit telephone number.
8. Fill in patient MCI ID number (DHEC Clients only).
9. Enter local and clinic ID if applicable. (Private clients must provide a clinic ID)
10. Enter Program number.
11. Enter Country of Birth.
12. Enter billing number if billing number is different from sender number.
13. Enter the Outbreak number.
14. Enter the date and time of collection and initial.
15. Check type/source of specimen.
16. Enter Ordering Physician, Provider and/or Nurse if applicable. **Note: Please print.**
17. Enter in the Special Instructions and/or comments where you vacated (travel history).
18. Enter Date of Onset if applicable.
19. List agents, organisms, or virus suspected.
20. Enter clinical diagnosis.
21. Check symptoms that apply.
22. Mark test requested.
23. Answer the four questions in Mycobacteriology Section.
24. Send one copy of the form with the specimen(s) to the lab. PLEASE RETAIN AN ADDITIONAL COPY FOR YOUR RECORDS.

Request forms will be retained following DHEC records retention schedule 8581, "Requests for Laboratory Analysis", Records Group Number: 169.

BOL Specimen Number

SC DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
Public Health Laboratory
8231 Parklane Road Columbia, SC 29223
(803)896 -0800

Sample Master Number

8606

CLIA # 42D065

☐Cat ☐Dog ☐Bat ☐Fox ☐Raccoon ☐Skunk ☐Rodent (Specify) _____ ☐Other (Specify) _____	☐Wild ☐Pet ☐Stray Has the animal been vaccinated against rabies? ☐Yes ☐No ☐Unknown	Date of Death MO DAY YR Date of Vaccination MO DAY YR

Sender Number	Abris Number	County Health Department Personnel	Office Phone Number	Cell Phone Number

Sender Address	**Address where the animal was found**
	Street: _____ City: County: _____ Zip Code: _____

Was the animal shot in the head? ☐Yes ☐No Was the animal buried prior to shipment? ☐Yes ☐No
Was the animal frozen prior to shipment? ☐Yes ☐No

Reason for Testing: ☐Human Exposure ☐Domestic Animal Exposure ☐Other_____

Type of Exposure: ☐Bite ☐Scratch ☐Contact Saliva ☐Unknown ☐Other _____

Date of Exposure:	**Exposure was** ☐Provoked ☐Unprovoked ☐NA

Name of Owner (Animal being tested)	Street	City/Zip Code	Telephone Number

HUMAN EXPOSURE (Complete the following)

Name of Person(s) Exposed	Street	City/Zip Code	Telephone Number

DOMESTIC ANIMAL EXPOSURE (Complete the following)

Type of Animal Exposed ☐Dog ☐Cat ☐Livestock (Specify) _____ ☐Other (Specify) _____	Name of Owner

Street	City/Zip Code	Telephone Number

DO NOT WRITE BELOW THIS LINE – FOR LABORATORY USE ONLY

CONDITION OF BRAIN: ☐Acceptable ☐Unacceptable
LABORATORY RESULTS: ☐Positive ☐Negative
☐Unsatisfactory for testing, specimen decomposed or deteriorated
☐Unsatisfactory for testing, brain stem unavailable for testing
EXCEPTION: ☐Not tested. Brain deteriorated
☐Not tested. No brain present in skull.

Date Reported: _____

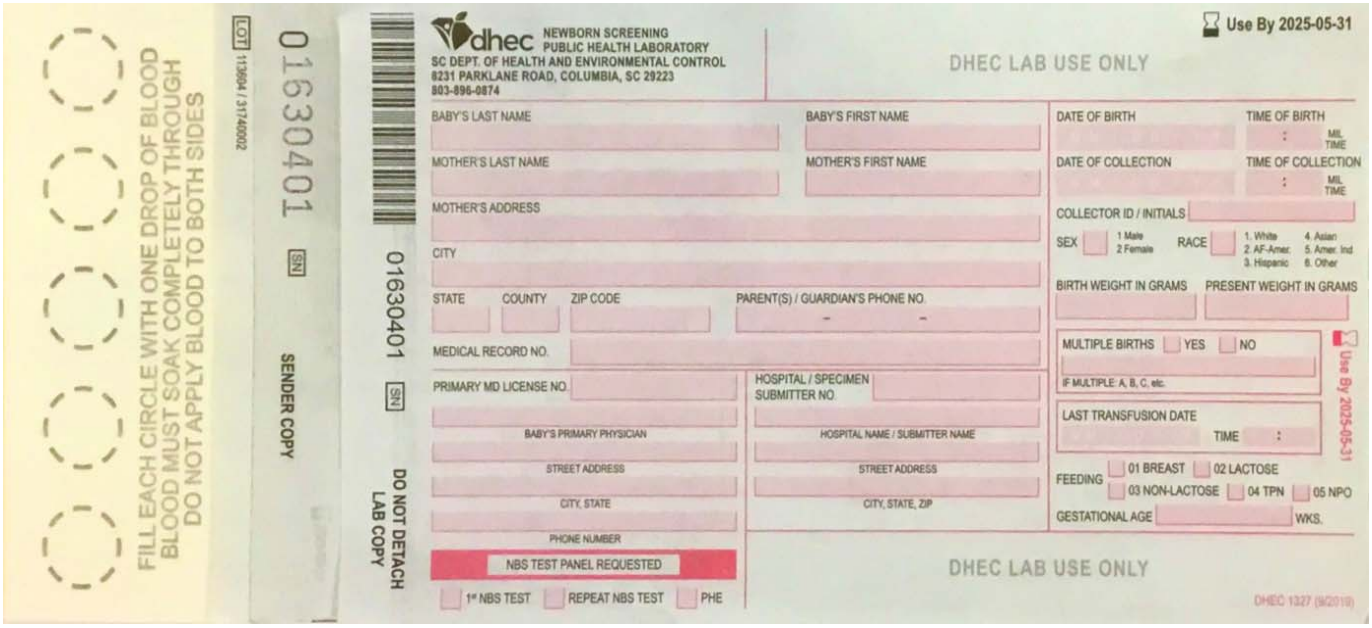
DHEC 1308 (Revised 06/17)

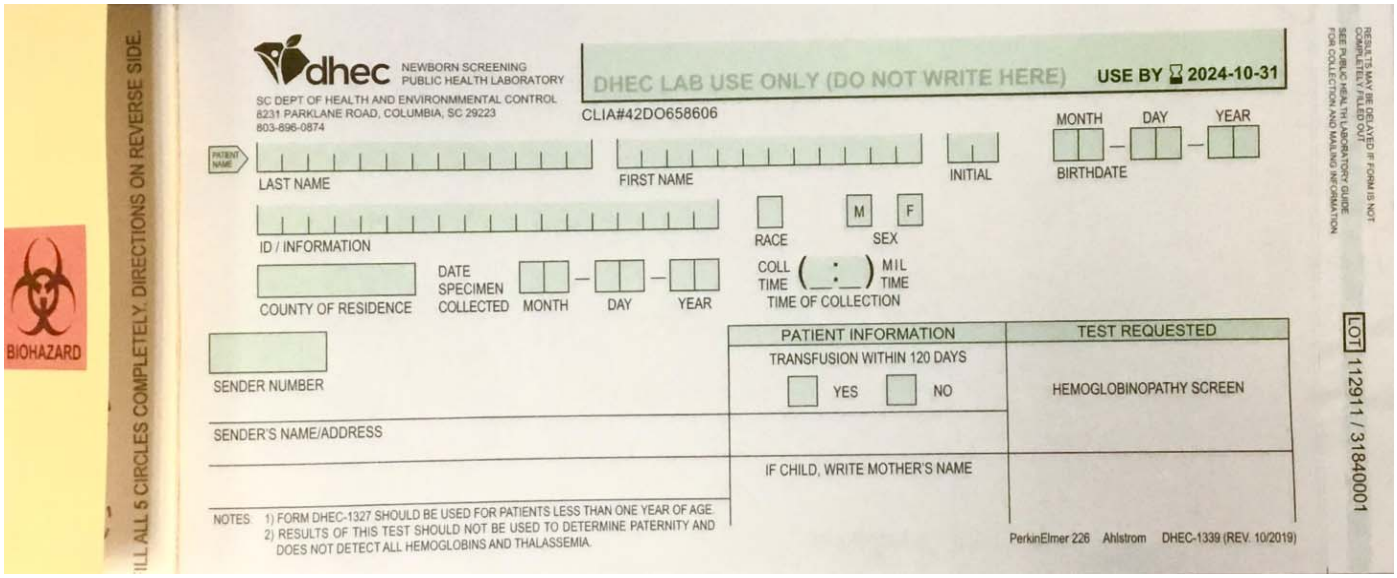
Personal information provided on this document is subject to public scrutiny or release.

Instruction for Completing Rabies Request Form

1. Check the appropriate box to identify the type of animal sent in for testing. If rodent or other is checked, specify the type of rodent (example: rat, mouse, etc) or type of other (example: opossum, horse, etc).
2. Check the appropriate box to identify the animal as wild, pet, or stray.
3. Enter the date of death.
4. Check box to indicate the animal's vaccination status. If inoculated against rabies, enter the vaccination date.
5. Enter sender number if not pre-printed on form.
6. Enter sender address if not pre-printed on form.
7. Enter Abris number used by the sender to identify the animal being tested for rabies.
8. Enter a contact person who will be responsible for receiving results.
9. Enter an office and home or cell phone number for the contact person.
10. Enter the address where the animal was found.
11. Check box to indicate if the animal was shot in the head, buried, or frozen priorto shipment.
12. Check the reason for testing and the type of exposure. Enter the date of exposure.
13. Check if the exposure was provoked or unprovoked.
14. Enter the name and address of the owner of the animal being tested. If the animal is stray or wild, leave blank.
15. If there was human exposure, give the name of the person(s) exposed, address, and phone number.
16. If there was pet exposure, check the type of pet or domestic animal exposed. Fill in the name of the owner of the animal exposed, the street address, city, zip code, and phone number.
17. Do not write in the "For Laboratory Use Only" box.
18. Send the top two copies to the form with the animal head. Retain the third copy for your records.

DHEC 1308 (Revised 10/16)


FILL EACH CIRCLE WITH ONE DROP OF BLOOD
BLOOD MUST SOAK COMPLETELY THROUGH
DO NOT APPLY BLOOD TO BOTH SIDES
LOT 113604 / 31740002
01630401 SN
SENDER COPY
01630401 SN
DO NOT DETACH LAB COPY
dhec NEWBORN SCREENING PUBLIC HEALTH LABORATORY
SC DEPT. OF HEALTH AND ENVIRONMENTAL CONTROL
8231 PARKLANE ROAD, COLUMBIA, SC 29223
803-896-0874
Use By 2025-05-31
DHEC LAB USE ONLY
BABY'S LAST NAME
BABY'S FIRST NAME
MOTHER'S LAST NAME
MOTHER'S FIRST NAME
MOTHER'S ADDRESS
CITY
STATE
COUNTY
ZIP CODE
PARENT(S) / GUARDIAN'S PHONE NO.
MEDICAL RECORD NO.
PRIMARY MD LICENSE NO.
BABY'S PRIMARY PHYSICIAN
STREET ADDRESS
CITY, STATE
PHONE NUMBER
HOSPITAL / SPECIMEN SUBMITTER NO.
HOSPITAL NAME / SUBMITTER NAME
STREET ADDRESS
CITY, STATE, ZIP
NBS TEST PANEL REQUESTED
1st NBS TEST
REPEAT NBS TEST
PHE
DATE OF BIRTH
TIME OF BIRTH
MIL TIME
DATE OF COLLECTION
TIME OF COLLECTION
COLLECTOR ID / INITIALS
SEX
1 Male
2 Female
RACE
1. White
2. AF-Amer.
3. Hispanic
4. Asian
5. Amer. Ind
6. Other
BIRTH WEIGHT IN GRAMS
PRESENT WEIGHT IN GRAMS
MULTIPLE BIRTHS YES NO
IF MULTIPLE: A, B, C, etc.
LAST TRANSFUSION DATE
TIME
FEEDING
01 BREAST
02 LACTOSE
03 NON-LACTOSE
04 TPN
05 NPO
GESTATIONAL AGE
WKS.
Use By 2025-05-31
DHEC LAB USE ONLY
DHEC 1327 (9/2019)


BIOHAZARD
ILL ALL 5 CIRCLES COMPLETELY. DIRECTIONS ON REVERSE SIDE.
dhec NEWBORN SCREENING PUBLIC HEALTH LABORATORY
SC DEPT OF HEALTH AND ENVIRONMMENTAL CONTROL
8231 PARKLANE ROAD, COLUMBIA, SC 29223
803-896-0874
DHEC LAB USE ONLY (DO NOT WRITE HERE)
USE BY 2024-10-31
CLIA#42DO658606
PATIENT NAME
LAST NAME
FIRST NAME
INITIAL
MONTH
DAY
YEAR
BIRTHDATE
ID / INFORMATION
RACE
M
F
SEX
COUNTY OF RESIDENCE
DATE SPECIMEN COLLECTED
MONTH
DAY
YEAR
COLL TIME
MIL TIME
TIME OF COLLECTION
SENDER NUMBER
SENDER'S NAME/ADDRESS
PATIENT INFORMATION
TRANSFUSION WITHIN 120 DAYS
YES
NO
IF CHILD, WRITE MOTHER'S NAME
TEST REQUESTED
HEMOGLOBINOPATHY SCREEN
NOTES: 1) FORM DHEC-1327 SHOULD BE USED FOR PATIENTS LESS THAN ONE YEAR OF AGE.
2) RESULTS OF THIS TEST SHOULD NOT BE USED TO DETERMINE PATERNITY AND DOES NOT DETECT ALL HEMOGLOBINS AND THALASSEMIA.
PerkinElmer 226 Ahlstrom DHEC-1339 (REV. 10/2019)
RESULTS MAY BE DELAYED IF FORM IS NOT COMPLETELY FILLED OUT.
SEE PUBLIC HEALTH LABORATORY GUIDE FOR COLLECTION AND MAILING INFORMATION
LOT 112911 / 31840001

COUNTY CODES

Abbeville	01	Greenwood	24
Aiken	02	Hampton	25
Allendale	03	Horry	26
Anderson	04	Jasper	27
Bamberg	05	Kershaw	28
Barnwell	06	Lancaster	29
Beaufort	07	Laurens	30
Berkeley	08	Lee	31
Calhoun	09	Lexington	32
Charleston	10	Marion	33
Cherokee	11	Marlboro	34
Chester	12	McCormick	35
Chesterfield	13	Newberry	36
Clarendon	14	Oconee	37
Colleton	15	Orangeburg	38
Darlington	16	Pickens	39
Dillon	17	Richland	40
Dorchester	18	Saluda	41
Edgefield	19	Spartanburg	42
Fairfield	20	Sumter	43
Florence	21	Union	44
Georgetown	22	Williamsburg	45
Greenville	23	York	46

SENDER NUMBERS

Private Physician Usually consists of the S.C. Medical License number preceded by the letter M.

Group Practice A number preceded by the letter G will be assigned to group practices at their request. Use of the group number will insure that a single bill will be sent for tests submitted by all physicians in the practice. If you desire to be billed in this manner, please contact (803) 896-0800 for assignment of a group number. If each physician wishes to be billed separately, use the appropriate assigned sender number.

Hospital Consists of the hospital license number preceded by the letter H. If the test result is to be mailed directly to the patient's physician, use the physician's name, address and sender number in the appropriate spaces on the form and write the hospital sender number in the billing number space.

Private Laboratory A number assigned by the Public Health Laboratory. If not known, contact the lab at (803) 896-0800 for assignment.

DHEC County Health Depts. Consists of the assigned county code number preceded by a C.

BILLING NUMBERS

A billing number is only necessary if the test is to be billed to someone other than the sender.

PROGRAM NUMBERS

Used only when billing to a DHEC Program

0001 Immunization-VFC Operations
0002 Children with Special Health Care Needs (CSHCN)
0004 Family Planning
0005 Sickle Cell Program
0006 Maternal and Child Health (MCH)
0007 Cancer Control
0009 Tuberculosis Services – Outpatient
0011 Sexually Transmitted Diseases (STD)
0026 Adult Health
0027 Birth Defects (Metabolic Screening Program)
0031 Expanded & Integrated Human HIV Testing- Non-Clinical
0035 Expanded and Integrated HIV Testing for Populations-Clinical
0043 Environmental Health
0053 Newborn Metabolic Screening & Follow-Up
0055 Infant and Child Health Screening & Follow-Up
0059 WCS (Women & Children's Services)
0063 Employee Health Services
0070 Epidemiology - Disease Control
0072 HIV-AIDS Alcohol & Drug Abuse Project
0095 WIC
0111 HIV/AIDS
0202 Immunization Program
0301 BT CDC Public Health Emergency Preparedness

SPECIMEN COLLECTION PROCEDURES

Specimen Collection: Venipuncture Using the Vacuum System

Precaution: Wear non-latex gloves and liquid impervious laboratory coat or apron while collecting and preparing blood for shipment.

Supplies: see Clinical Formulary on the intranet for approved supplies

1. Vacuum tube system
2. Vacuum needle, 1 inch or 1 ½ inch; 18, 20, 21, 22, or 23 gauge
3. Disposable vacuum needle holder
4. Disposable tourniquet
5. 70% isopropyl alcohol or benzylkonium chloride pads
6. Sterile gauze pads (NO COTTON BALLS!)
7. Band-aids (optional)
8. Sharps disposal container (with stand or wall mounted)
9. Biohazard waste container

Personal Protective Equipment (PPE) Requirements:

1. Disposable gloves (required during collection)
2. Safety glasses (required if there is any chance of eye/mouth contamination during collection; strongly recommended if you wear contacts)
3. Liquid resistant/impervious lab coat or apron (required during collection)
4. Additional protection as recommended by OSHA and/or MSDS

Specimen Collection: You MUST have completed a DHEC Workshop and be rated proficient and competent BEFORE you can collect a venipuncture without direct supervision.

1. While putting on the appropriate PPE, explain the procedure to the patient and ask the patient to identify themselves or check a picture identification card.
    a. BEFORE putting on ANY PPE, wash hands with soap and water or use a hand sanitizer with at least 60% alcohol content.
    b. Order for putting on PPE: put eye protection on first (optional), then put on liquid resistant/impervious lab coat/apron, and then put on non-latex gloves.

2. Position the patient for taking blood from the antecubital vein, or the median cubital vein, or the cephalic vein.
    a. DIS can ONLY use one of these sites to collect venipuncture.
    b. MDs, APRNs, RNs, MTs, MLTs can use other sites on the arm or hand, if trained using standard Training Checklist and passed Competency Evaluation annually.

3. Apply disposable tourniquet to the arm just above the elbow and instruct the patient to make a fist; it is NOT necessary for the patient to “pump” their fist.
    a. Always palpate the vein with the disposable tourniquet BEFORE making a decision to puncture the vein.
    b. DO NOT leave the tourniquet on for >2 minutes during a venipuncture!

4. Select the best vein and cleanse the skin over the puncture site with 70% alcohol or benzylkonium chloride in ONE DIRECTION!
   a. **DO NOT** wipe back and forth with the 70 % alcohol/benzylkonium chloride.
   b. Allow to dry without blowing on the site or fanning the site.
   c. Once the site is dry, **DO NOT** palpate the vein with gloved finger; these are not sterile gloves.

5. Use sterile vacuum needle and attach (screwed onto) to a disposable adaptor.
   a. The vacuum collection tube may be inserted into the adaptor without danger of breaking the vacuum.
   b. **DO NOT** pierce the vacuum on the tube with the adapter needle.

6. "Fix" the vein selected for the venipuncture.
   a. Left thumb about an inch below where the needle is to enter.
   b. Press down on the arm and pull the skin toward the hand.
   c. The needle is to be in line with the vein.
   d. The needle is to be BEVEL SIDE UP!
   e. The needle is to be at approximately a 15 degree angle with the arm.
   f. You can adjust the angle depending on the depth of the vein.

7. Puncture the skin with a clean, smooth motion. BEVEL SIDE UP!
   a. **DO NOT** hesitate; this hurts.
   b. As the needle enters the vein, a little "give" will be felt.
   c. When inside the vein, grip the tube holder firmly and keep the holder steady.
   d. Press the vacuum tube onto the needle portion inside the holder.

8. While the needle is inside the vein, collect the required tubes of blood.
   a. Note: Collect blood in plain (red stopper) tubes before collecting blood in tubes with additives (e.g. EDTA)
   b. Note: DIS are ONLY allowed to collect a single tube per venipuncture.
   c. Mix tubes with additives by gently inverting 5-10 times to prevent clotting.
   d. **DO NOT** shake the tube(s)!
   e. Allow the red top tubes to stand in a test tube rack, upright, for at least 30 minutes to allow clotting before centrifugation.
   f. Note: some patients may take longer to clot, so allow extra time if patient is on maintenance doses of Coumadin and/or other platelet aggregate inhibitors.

9. Release tourniquet, withdraw needle from vein and apply pressure on venipuncture site with dry gauze.
   a. **DO NOT** cover the injection site with an alcohol sponge while withdrawing needle.
   b. **DO NOT** apply pressure on the venipuncture site with gauze if the needle is still in the arm!

10. Have patient apply pressure on the venipuncture site for 2-3 minutes to prevent leakage of blood under the skin and formation of a hematoma. When site no longer bleeds, a bandage may be applied if desired.
    a. Ask the patient to hold their arm straight up and lock their elbow.
    b. If the patient cannot do this, hold the arm straight up for them.

11. Label specimen tube (s) with proper patient identification information; if not already done when getting supplies together.
    a. Name of patient/client (first name and last name).
    b. MCI number or other unique identification number.
    c. Date collected, time collected and initials of person who collected specimen.
    d. Note: if you use a computer label, just add time and initials of person collecting specimen.

12. Complete ALL information on the test request/lab requisition form(s): DHEC 1332/1335.
    a. Name of patient/client (first name and last name).
    b. MCI number or other unique identification number.
    c. Date collected, time collected and initials of person who collected specimen.
    d. Test required
    e. Type of specimen
    f. Ordering physician, APRN, RN, DIS
    g. Test(s) requested
    h. Sender Address or Sender code number
    i. Any specimen instructions or other important information
    j. Note: if you use a computer label, just add time and initials of person collecting specimen.
    k. Note: if you use a computer label, be sure to place the computer label with all demographic information on copy 1, copy 2 and copy 3.
    l. You will send the original top copy of the DHEC 1332/1335 with the specimen(s)
    m. Retain the third copy for your files in the County Health laboratory.

13. Properly dispose of needles (in biohazard puncture proof sharps container) and other contaminated materials used during venipuncture.
    a. Place all blood soaked material in the contaminated waste bag (Biohazard).
    b. Place all sharps in the sharps container and DO NOT fill above 2/3!
    c. DO NOT place any non-contaminated waste in the sharps container or Biohazard waste!

14. Remove PPEs in this order:
    a. Remove contaminated gloves.
    b. Wash hands with soap and water or with hand sanitizer with >60% alcohol.
    c. Remove any eye protection.
    d. Remove liquid impervious/resistant lab coat or apron.
    e. Wash hands with soap and water or with hand sanitizer with >60% alcohol.

15. BEFORE allowing the patient/client to leave, take the gauze off of the venipuncture site to ensure it has stopped bleeding.
    a. DO NOT wipe the area with gauze since this will initiate bleeding again (subcutaneous) and may cause a hematoma (bruise).
    b. DO NOT allow patient to get up from the chair, table, etc. without being physically at the side or in front of the patient/client: THIS IS A FALL PREVENTION MEASURE!

16. NOTE: DIS staff can ONLY draw one tube; no multi-draws or multiple tubes collected from the same venipuncture collection site.

17. No DIS staff can be trained and/or use a butterfly to collect a venipuncture.

Specimen Preparation:

1. Blood collected in a plain red stopper tube or in a serum separator tube (SST): allow the tube of blood to remain undisturbed in an upright position at room temperature for 20-30 minutes.
    a. When the specimen has clotted, DO NOT allow the serum to sit on the clot, whether collected in a red tube or SST tube, without separating through centrifugation; then store according to instructions in the Reference Laboratory manual for specimen collection and transport.
    b. Note: check manufacturer's package insert for maximum time blood can sit on clot BEFORE centrifugation, if using an SST (serum separator tube).

2. After a clot has formed, gently loosen the clot at the top; "rim" with a sterile applicator stick, if necessary.

3. Centrifuge tubes for 10-15 minutes.
   a. Since all centrifuges are calibrated by Instrumentation Department (Facilities Management Division, Public Health Laboratory), the time for most centrifugation needs will be on the instrument.
   b. CHECK OUT THE CALIBRATED TIME/SPEED ON YOUR CENTRIFUGE!

4. Remove the serum carefully with a sterile transfer pipette, and transfer to a clean sterile rubber- stoppered tube or to a screw-top, plastic vial/tube. Avoid transferring any red cells.

5. Label tube or plastic vial running up the length of the tube.
   a. **Do NOT** wrap the label around or "flag" the label by pressing ends together and extending from the tube.
   b. This includes ALL vacuum tubes for chemistry, hematology and serology; red top, SST, or purple (EDTA) top tubes would be the common ones.

6. Store tubes of labeled serum in a refrigerator until the specimens are ready to ship to the clinic laboratory or the Public Health Laboratory.

Special Procedural Notes:

1. If sending whole blood in a vacuum tube, omit steps 2 and 4 (see page III-6).

2. If using serum separator tubes (gel in the bottom of the tube, SST) omit steps 2 and 4 above. Be sure the gel forms a distinct barrier between serum and clot.

3. During the summer months, pack all SST specimens with a cold pack since the gel can possibly breakdown at temperatures experienced during the summer months. The breakdown of the gel allows the red blood cells to "leak" into the serum contaminating the specimen and possibly rendering the specimen unacceptable for testing.

4. Never use a gauge needle size smaller than a 23: this can cause hemolysis!

6. Always allow the blood to flow into a vacuum tube without adding additional pressure.

7. **DO NOT** take disposable tourniquet off until you have collected ALL of the tubes and the tubes are filled: when you take the tourniquet off once you are inside you run the risk of slow blood flow and/or short draws and/or insufficient blood volume.

8. For special considerations using a butterfly for a venipuncture, see the next procedure.

Specimen Collection: Venipuncture Using a Butterfly System

Precaution: Wear non-latex gloves and liquid impervious laboratory coat or apron while collecting and preparing blood for shipment.

Supplies: see Clinical Formulary on the intranet for approved supplies

1. Vacuum tube system
2. Butterfly needle: 21g, 22g, or 23g (NO SMALLER THAN 23G!)
3. Disposable vacuum needle holder
4. Disposable tourniquet
5. 70% isopropyl alcohol or benzylkonium chloride pads
6. Sterile gauze pads (NO COTTON BALLS!)
7. Band-aids (optional)
8. Sharps disposal container (with stand or wall mounted)
9. Biohazard waste container

Personal Protective Equipment (PPE) Requirements:

1. Disposable gloves (required during collection)
2. Safety glasses (required if there is any chance of eye/mouth contamination during collection; strongly recommended if you wear contacts)

3. Liquid resistant/impervious lab coat or apron (required during collection)
4. Additional protection as recommended by OSHA and/or MSDS

Specimen Collection: You MUST have completed a DHEC Workshop and be rated proficient and competent BEFORE you can collect a venipuncture without direct supervision. No DIS staff can be trained using this method.

Note: the use of a butterfly is to be used ONLY in special circumstances: elderly patients with non- patent veins; young children (less than 4 years old) or babies; patients with non-patent veins and the hand is the site of choice.

1. While putting on the appropriate PPE, explain the procedure to the patient and ask the patient to identify themselves or check a picture identification card.
   a. BEFORE putting on ANY PPE, wash hands with soap and water or use a hand sanitizer with at least 60% alcohol content.
   b. Order for putting on PPE: put eye protection on first (optional), then put on liquid resistant/impervious lab coat/apron, and then put on non-latex gloves.

2. Position the patient for taking blood from the antecubital vein, or the median cubital vein, or the cephalic vein: these are all on the arm.
   a. DIS can ONLY use one of these sites to collect venipuncture.
   b. MDs, APRNs, RNs, MTs, MLTs can use other sites on the arm or hand, if trained using standard Training Checklist and passed Competency Evaluation annually.
      1) Veins from the hand that can be used are: basilic veins (runs along the 5^{th} digit, little finger).
      2) Veins from the hand that can be used are: metacarpal veins (runs along the 2^{nd} or 4th digit, index/pointer finger and ring finger).
      3) Veins from the hand that can be used are: cephalic vein (runs along the side of wrist area or just above the thumb).

4) NO OTHER sites are to be used with the butterfly other than those listed in the venipuncture using the vacuum and the butterfly; no femoral, no temporal, no jugular, etc.

3. Apply disposable tourniquet to the arm just above the elbow, or on the forearm if using the hand, and instruct the patient to make a fist; it is NOT necessary for the patient to "pump" their fist.
   a. Always palpate the vein with the disposable tourniquet BEFORE making a decision to puncture the vein.
   b. DO NOT leave the tourniquet on for >2 minutes during a venipuncture!

4. Select the best vein and cleanse the skin over the puncture site with 70% alcohol or benzylkonium chloride in **ONE DIRECTION!**
   a. **DO NOT** wipe back and forth with the 70 % alcohol/benzylkonium chloride.
   b. Allow to dry without blowing on the site or fanning the site.
   c. Once the site is dry, **DO NOT** palpate the vein with gloved finger; these are not sterile gloves.

5. Use sterile butterfly needle and attach (screwed onto) to a disposable adaptor.
   a. If a butterfly is used with a syringe (5cc, 7cc or 10cc), collect the specimen following the same steps, except you will fill the vacuum tubes with the blood from the syringe.
   b. **DO NOT** put blood into the vacuum tubes by pressing the needle through the rubber septum; take the rubber septum off and gently add blood to the tube.
   c. The vacuum collection tube may be inserted into the adaptor without danger of breaking the vacuum.
   d. **DO NOT** pierce the vacuum on the tube with the adapter needle.

6. "Fix" the vein selected for the venipuncture.
   a. Left thumb about an inch below where the needle is to enter.
   b. Press down on the arm and pull the skin toward the hand.
   c. The needle is to be in line with the vein.
   d. The needle is to be BEVEL SIDE UP!
   e. The needle is to be at approximately a 15 degree angle with the arm.
   f. You can adjust the angle depending on the depth of the vein.

7. Puncture the skin with a clean, smooth motion. BEVEL SIDE UP!
   a. **DO NOT** hesitate; this hurts.
   b. As the needle enters the vein, a little "give" will be felt.
   c. When inside the vein, grip the tube holder firmly and keep the holder steady.
   d. Press the vacuum tube onto the needle portion inside the holder.

8. While the needle is inside the vein, collect the required tubes of blood.
   a. **Note: Collect blood in plain (red stopper) tubes before collecting blood in tubes with additives (e.g. EDTA**).
   b. Note: DIS is ONLY allowed to collect a single tube per venipuncture.
   c. Mix tubes with additives by gently inverting 5-10 times to prevent clotting.
   d. **DO NOT** shake the tube(s)!
   e. Allow the red top tubes to stand in a test tube rack, upright, for at least 30 minutes to allow clotting before centrifugation.
   f. Note: some patients may take longer to clot, so allow extra time if patient is on maintenance doses of Coumadin and/or other platelet aggregate inhibitors.

9. Release tourniquet, withdraw needle from vein and apply pressure on venipuncture site with dry gauze.
    a. **DO NOT** cover the injection site with an alcohol sponge while withdrawing needle.
    b. **DO NOT** apply pressure on the venipuncture site with gauze if the needle is still in the arm!

10. Have patient apply pressure on the venipuncture site for 2-3 minutes to prevent leakage of blood under the skin and formation of a hematoma. When site no longer bleeds, a bandage may be applied if desired.
    a. Ask the patient to hold their arm straight up and lock their elbow.
    b. If the patient cannot do this, hold the arm straight up for them.

11. Label specimen tube (s) with proper patient identification information; if not already done when getting supplies together.
    a. Name of patient/client (first name and last name).
    b. MCI number or other unique identification number.
    c. Date collected, time collected and initials of person who collected specimen.
    d. Note: if you use a computer label, just add time and initials of person collecting specimen.

12. Complete ALL information on the test request/lab requisition form(s): DHEC 1332/1335.
    a. Name of patient/client (first name and last name).
    b. MCI number or other unique identification number.
    c. Date collected, time collected and initials of person who collected specimen.
    d. Test required
    e. Type of specimen
    f. Ordering physician, APRN, RN, DIS
    g. Test(s) requested
    h. Sender Address or Sender code number
    i. Any specimen instructions or other important information
    j. Note: if you use a computer label, just add time and initials of person collecting specimen.
    k. Note: if you use a computer label, be sure to place the computer label with all demographic information on copy 1, copy 2 and copy 3.
    l. You will send the original top copy of the DHEC 1332/1335 with the specimen(s)
    m. Retain the third copy for your files in the County Health laboratory.

13. Properly dispose of needles (in biohazard puncture proof sharps container) and other contaminated materials used during venipuncture.
    a. Place all blood soaked material in the contaminated waste bag (Biohazard).
    b. Place all sharps in the sharps container and DO NOT fill above 2/3!
    c. **DO NOT** place any non-contaminated waste in the sharps container or Biohazard waste!

14. Remove PPEs in this order:
    a. Remove contaminated gloves.
    b. Wash hands with soap and water or with hand sanitizer with >60% alcohol.
    c. Remove any eye protection.
    d. Remove liquid impervious/resistant lab coat or apron.
    e. Wash hands with soap and water or with hand sanitizer with >60% alcohol.

15. BEFORE allowing the patient/client to leave, take the gauze off of the venipuncture site to ensure it has stopped bleeding.
    a. **DO NOT** wipe the area with gauze since this will initiate bleeding again (subcutaneous) and may cause a hematoma (bruise).

b. **DO NOT** allow patient to get up from the chair, table, etc. without being physically at the side or in front of the patient/client: THIS IS A FALL PREVENTION MEASURE!

Specimen Preparation:

1. Blood collected in a plain red stopper tube or in a serum separator tube (SST): allow the tube of blood to remain undisturbed in an upright position at room temperature for 20-30 minutes.
   a. When the specimen has clotted, DO NOT allow the serum to sit on the clot, whether collected in a red tube or SST tube, without separating through centrifugation; then store according to instructions in the Reference Laboratory manual for specimen collection and transport.
   b. Note: check manufacturer's package insert for maximum time blood can sit on clot BEFORE centrifugation, if using an SST (serum separator tube).

2. After a clot has formed, gently loosen the clot at the top; "rim" with a sterile applicator stick, if necessary.

3. Centrifuge tubes for 10-15 minutes.
   a. Since all centrifuges are calibrated by Instrumentation Department (Facilities Management Division, Public Health Laboratory), the time for most centrifugation needs will be on the instrument.
   b. CHECK OUT THE CALIBRATED TIME/SPEED ON YOUR CENTRIFUGE!

4. Remove the serum carefully with a sterile transfer pipette, and transfer to a clean sterile rubber- stoppered tube or to a screw-top, plastic vial/tube. Avoid transferring any red cells.

6. Label tube or plastic vial running up the length of the tube.
   a. **Do NOT** wrap the label around or "flag" the label by pressing ends together and extending from the tube.
   b. This includes ALL vacuum tubes for chemistry, hematology and serology; red top, SST, or purple (EDTA) top tubes would be the common ones.

7. Store tubes of labeled serum in a refrigerator until the specimens are ready to ship to the clinic laboratory or the Public Health Laboratory.

Special Procedural Notes:

1. If sending whole blood in a vacuum tube, omit steps 2 and 4 (see page III-6).

2. If using serum separator tubes (gel in the bottom of the tube, SST) omit steps 2 and 4 above. Be sure the gel forms a distinct barrier between serum and clot.

3. During the summer months, pack all SST specimens with a cold pack since the gel can possibly breakdown at temperatures experienced during the summer months. The breakdown of the gel allows the red blood cells to "leak" into the serum contaminating the specimen and possibly rendering the specimen unacceptable for testing.

4. Always refer to the Public Health Laboratory Services Guide for complete instructions for specimen collection, specimen preparation, specimen storage and specimen transport for the specific laboratory test(s). Note: use current edition only.

5. Never use a gauge needle size smaller than a 23: this can cause hemolysis!

6. Always allow the blood to flow into a vacuum tube without adding additional pressure.

7. DO NOT take disposable tourniquet off until you have collected ALL of the tubes and the tubes are filled: when you take the tourniquet off once you are inside you run the risk of slow blood flow and/or short draws and/or insufficient blood volume.

Specimen Collection: Fingerstick Procedure for Patients Greater Than 1 Year Old

Hemoglobin or General Laboratory Procedures

Precaution: Wear gloves and liquid resistant lab coat or apron while collecting and preparing blood for shipment.

Supplies: see Clinical Formulary on the intranet for approved supplies

1. Retractable safety lancets: see Clinical Formulary on the intranet for approved lancets for adults and pediatrics
2. 70% isopropyl alcohol pads or benzylkonium chloride pads
3. Sterile gauze pads (NO COTTON BALLS!)
4. Band-aids (optional)
5. Sharps disposal container (with stand or wall mounted)
6. Biohazard waste container

Personal Protective Equipment (PPE) Requirements:

1. Disposable gloves (required during collection)
2. Safety glasses (required if there is any chance of eye/mouth contamination during collection; strongly recommended if wear contact lens)
3. Liquid resistant lab coat or apron (required during collection)
4. Additional protection as recommended by OSHA and/or MSDS

Specimen Collection: You MUST have completed a DHEC Workshop and be rated proficient and competent BEFORE you can collect a fingerstick without direct supervision.

1. While putting on the appropriate PPE, explain the procedure to the patient and ask the patient to identify themselves or check a picture identification card; if a child, ask parent and/or guardian to state child's name.
   a. BEFORE putting on ANY PPE, wash hands with soap and water or use a hand sanitizer with at least 60% alcohol content.
   b. Order for putting on PPE: put eye protection on first (optional), then put on liquid resistant/impervious lab coat/apron, and then put on non-latex gloves.

2. Have all supplies within easy reach and all materials ready to use before performing the fingerstick procedure.

3. Place the sharps disposal container and waste container so you DO NOT have to cross over the patient or yourself when discarding contaminated items.

4. Wash hands with soap and water or use a hand sanitizer with at least 60% alcohol; put on disposable gloves.

5. Instruct the patient to rest his/her arm downward position for about 30 seconds to allow blood flow to the fingertips. If the patient's hand is cold, warm the hand:
   a. Gently massage the finger a few times from the base to the tip of the finger.
   b. Stroke the arm with gentle downward motion from the forearm to the hand.
   c. Ask the patient to briskly rub both hands together.
   d. Use a warm (not more than 105 degrees F.), moist towel on the hand for a couple of minutes.
   e. Ask the patient to wash his/her hands with warm water.

6. Select the middle or ring finger for puncture on the hand used least often.

7. **Do NOT** choose a puncture site on a fingertip that is callused, purple, scarred, swollen, or injured.

8. Use the less painful, fleshy area of the fingertip, just off center to the finger pad, slightly to the side.

9. Clean the puncture site with an alcohol pad or benzylkonium chloride pad.
   a. Wipe in one direction ONLY!
   b. Allow the alcohol or benzylkonium chloride to evaporate.
   c. **Do NOT** blow on the finger or fan the area.

10. **Do NOT** saturate the site with alcohol.
    Note: Discard the used alcohol pad and wrapper in the regular trash can.

11. Allow the site to air dry completely.

12. Firmly hold the patient's finger, palm side up, between your thumb and index finger.

13. Puncture the site and dispose of the used lancet in the sharps container.
    a. Note: Puncture the finger with the lancet PERPENDICULAR to the ridge swirls on the finger.
    b. Place the lancet FIRMLY on the finger pad site BEFORE triggering the lancet.

14. Wipe away the first 2-3 drops of blood with the sterile gauze.

15. Apply gentle pressure every few seconds, about ½ inches from the puncture site.

16. Collect specimen in a microtube (bullet), or for dried blood spots, or a hemoglobin cuvette.

17. Have patient apply pressure on the site for 2-3 minutes to prevent leakage of blood under the skin and formation of a hematoma. When site is no longer bleeding, a bandage may be applied if desired.
    a. Ask the patient/or parent to hold the gauze on the finger.
    b. If the patient cannot do this, hold the finger for them.

18. Label specimen tube (s) with proper patient identification information; if not already done when getting supplies together.
    a. Name of patient/client (first name and last name).
    b. MCI number or other unique identification number.
    c. Date collected, time collected and initials of person who collected specimen goes on the requisition/lab form.
    d. Note: if you use a HemoCue microcuvette, the frosted edge needs to have patient's last name at least and the date.

19. Complete ALL information on the test request/lab requisition form(s): DHEC 1332/1335.
    a. Name of patient/client (first name and last name).
    b. MCI number or other unique identification number.
    c. Date collected, time collected and initials of person who collected specimen.
    d. Test required
    e. Type of specimen
    f. Ordering physician, APRN, RN, DIS
    g. Test(s) requested

h. Sender Address or Sender code number
i. Any specimen instructions or other important information
j. Note: if you use a computer label, just add time and initials of person collecting specimen.
k. Note: if you use a computer label, be sure to place the computer label with all demographic information on copy 1, copy 2 and copy 3.
l. You will send the original top copy of the DHEC 1332/1335 with the specimen(s)
m. Retain the third copy for your files in the County Health laboratory.

20. Properly dispose of lancets (in biohazard puncture proof sharps container) and other contaminated materials used during fingerstick.
    a. Place all blood soaked material in the contaminated waste bag (Biohazard).
    b. Place all sharps in the sharps container and DO NOT fill above 2/3!
    c. DO NOT place any non-contaminated waste in the sharps container or Biohazard waste!

21. Remove PPEs in this order:
    a. Remove contaminated gloves.
    b. Wash hands with soap and water or with hand sanitizer with >60% alcohol.
    c. Remove any eye protection.
    d. Remove liquid impervious/resistant lab coat or apron.
    e. Wash hands with soap and water or with hand sanitizer with >60% alcohol.

22. BEFORE allowing the patient/client to leave, take the gauze off of the fingerstick site to ensure it has stopped bleeding.
    a. DO NOT wipe the area with gauze since this will initiate bleeding again (subcutaneous) and may cause a hematoma (bruise).
    b. DO NOT allow patient to get up from the chair, table, etc. without being physically at the side or in front of the patient/client: THIS IS A FALL PREVENTION MEASURE!

Specimen Collection: Fingerstick for Patients Greater Than 1 Year Old

Dried Blood Spots Collection

Precaution: Wear gloves and liquid resistant lab coat or apron while collecting and preparing blood for shipment.

The filter paper to be used in the collection of dried blood spots is attached to the DHEC form 1339 for HEMOGLOBIN ELECTROPHORESIS or the DHEC form 1327 for PKU MONITORING. Envelopes for mailing specimen are also available.

Sufficient blood MUST be obtained from the fingerstick puncture to fill each circle by making a single application of blood to the filter paper. The filter paper should touch only the drop of blood and should not be pressed against the skin around the puncture. Be sure that the filter paper is saturated through with blood. DO NOT superimpose blood drops! This leads to inaccurate results.

Supplies:

1. Retractable safety lancets for infant or pediatric: see Clinical Formulary listings on the intranet for approved lancets
2. 70% isopropyl alcohol or benzylkonium chloride pads
3. Sterile gauze pads (NO COTTON BALLS!)
4. Band-aids (optional)
5. Sharps disposal container (with stand or wall mounted)
6. Biohazard waste container

Personal Protective Equipment (PPE) Requirements:

1. Disposable gloves (required during collection)
2. Safety glasses (required if there is any chance of eye/mouth contamination duringcollection; strongly recommend if wear contact lens)
3. Liquid resistant lab coat or apron (required during collection)
4. Additional protection as recommended by OSHA and/or MSDS

Specimen Collection:

1. While putting on the appropriate PPE, explain the procedure to the patient and ask the patient to identify themselves or check a picture identification card; if a child, ask parent and/or guardian to state child's name.
   a. BEFORE putting on ANY PPE, wash hands with soap and water or use a hand sanitizer with at least 60% alcohol content.
   b. Order for putting on PPE: put eye protection on first (optional), then put on liquid resistant/impervious lab coat/apron, and then put on non-latex gloves.

2. Have all supplies within easy reach and all materials ready to use before performing the fingerstick procedure.

3. Place the sharps disposal container and waste container so you **DO NOT** have to cross over the patient or yourself when discarding contaminated items.

4. Wash hands with soap and water or use a hand sanitizer with at least 60% alcohol; put on disposable gloves.

5. Instruct the patient to rest his/her arm downward position for about 30 seconds to allow blood flow to the fingertips. If the patient's hand is cold, warm the hand:
   a. Gently massage the finger a few times from the base to the tip of the finger.
   b. Stroke the arm with gentle downward motion from the forearm to the hand.
   c. Ask the patient to briskly rub both hands together.
   d. Use a warm (not more than 105 degrees F.), moist towel on the hand for a couple of minutes.
   e. Ask the patient to wash his/her hands with warm water.

6. Select the middle or ring finger for puncture on the hand used least often.

7. **Do NOT** choose a puncture site on a fingertip that is callused, purple, scarred, swollen, or injured.

8. Use the less painful, fleshy area of the fingertip, just off center to the finger pad, slightly to the side.

9. Clean the puncture site with an alcohol pad or benzylkonium chloride pad.
   a. Wipe in one direction **ONLY**!
   b. Allow the alcohol or benzylkonium chloride to evaporate.
   c. **Do NOT** blow on the finger or fan the area.

10. **Do NOT** saturate the site with alcohol.
    Note: Discard the used alcohol pad and wrapper in the regular trash can.

11. Allow the site to air dry completely.

12. Firmly hold the patient's finger, palm side up, between your thumb and index finger.

13. Puncture the site and dispose of the used lancet in the sharps container.
    a. Note: Puncture the finger/heel with the lancet PERPENDICULAR to the ridge swirls on the finger.
    b. Place the lancet FIRMLY on the finger pad/heel site BEFORE triggering the lancet.

14. Wipe away the first drop of blood with the sterile gauze.

15. Apply gentle pressure every few seconds, about ½ inches from the puncture site.

16. Collect specimen onto filter paper for dried blood spots.

17. Have patient apply pressure on the site for 2-3 minutes to prevent leakage of blood under the skin and formation of a hematoma. When site is no longer bleeding, a bandage may be applied if desired.
    a. Ask the patient/or parent to hold the gauze on the finger.
    b. If the patient cannot do this, hold the finger for them.

18. Complete ALL information on the 1327 or 1339 form:
    a. Name of patient/client (first name and last name).
    b. MCI number or other unique identification number.
    c. Date collected, time collected and initials of person who collected specimen.
    d. Ordering physician, APRN, RN, DIS
    e. Complete submitter and/or physician information
    f. You will send the original top copy of the DHEC 1327/1339 with the specimen(s).
    g. Retain the middle copy for your files.

19. Properly dispose of lancets (in biohazard puncture proof sharps container) and other contaminated materials used during fingerstick.
    a. Place all blood soaked material in the contaminated waste bag (Biohazard).
    b. Place all sharps in the sharps container and **DO NOT** fill above 2/3!
    c. **DO NOT** place any non-contaminated waste in the sharps container or Biohazard waste!

20. Remove PPEs in this order:
    a. Remove contaminated gloves.
    b. Wash hands with soap and water or with hand sanitizer with >60% alcohol.
    c. Remove any eye protection.
    d. Remove liquid impervious/resistant lab coat or apron
    e. Wash hands with soap and water or with hand sanitizer with >60% alcohol.

21. BEFORE allowing the patient/client to leave, take the gauze off of the fingerstick site to ensure it has stopped bleeding.
    a. **DO NOT** wipe the area with gauze since this will initiate bleeding again (subcutaneous) and may cause a hematoma (bruise).
    b. **DO NOT** allow patient to get up from the chair, table, etc. without being physically at the side or in front of the patient/client: THIS IS A FALL PREVENTION MEASURE!

22. Special Procedural Notes for Dried Blood Spots:
    a. When properly filled, the blood spot will be the same size on both sides of the filter paper.

    b. **DO NOT** send the specimen if the circles are not completely filled—collect a second sample.
    c. All the circles are needed. If tests have to be repeated or additional tests need to be run, all 5 circles are required.

Troubleshooting:

1. Failure to wipe off alcohol residue may dilute the specimen and adversely affect test results.

2. Puncturing the heel on posterior curvature will permit blood to flow away from puncture, making proper spotting difficult.

3. **DO NOT** lance on previous puncture site.

4. Use of a capillary tube is not recommended since application of blood with a capillary tube results in scratching and/or abrading the surface of the filter paper which adversely affects test results.

5. Avoid touching area within filter paper circles before blood is applied.

6. **DO NOT** place filter paper in the envelope until thoroughly dry.

7. INSUFFICIENT DRYING ADVERSELY AFFECTS TEST RESULTS!

Specimen Collection: Heel-stick Procedure for Patients Less Than 1 Year Old

Hemoglobin or General Laboratory Testing or Newborn Screening

Precaution: Wear gloves and liquid resistant lab coat or apron while collecting and preparing blood for shipment.

Supplies: see Clinical Formulary on the intranet for approved supplies

1. Retractable safety lancets: Tenderfoot™ or lancet giving 1.0 mm – 2.0 mm depth
2. 70% isopropyl alcohol or benzylkonium chloride pads
3. Sterile gauze pads **(NO COTTON BALLS**!)
4. Band-aids (optional)
5. Sharps disposal container (with stand or wall mounted)
6. Biohazard waste container

Personal Protective Equipment (PPE) Requirements:

1. Disposable gloves (required during collection)
2. Safety glasses (required if there is any chance of eye/mouth contamination during collection; strongly recommend if wear contact lens)
3. Liquid resistant lab coat or apron (required during collection)
4. Additional protection as recommended by OSHA and/or MSDS Personal

Protective Equipment (PPE) Requirements:

1. Disposable gloves (required during collection)
2. Safety glasses (required if there is any chance of eye/mouth contamination during collection)
3. Liquid resistant lab coat or apron (required during collection)
4. Closed-toe shoes MUST be worn when collecting ANY blood specimens
5. Additional protection as recommended by OSHA and/or MSDS

Specimen Collection: You MUST have completed a DHEC Workshop and be rated proficient and competent BEFORE you can collect a fingerstick without direct supervision.

1. While putting on the appropriate PPE, explain the procedure to the patient and ask the patient to identify themselves or check a picture identification card; if a child, ask parent and/or guardian to state child's name.
   a. BEFORE putting on ANY PPE, wash hands with soap and water or use a hand sanitizer with at least 60% alcohol content.
   b. Order for putting on PPE: put eye protection on first (optional), then put on liquid resistant/impervious lab coat/apron, and then put on non-latex gloves.

2. Have all supplies within easy reach and all materials ready to use before performing the heelstick procedure.

3. Place the sharps disposal container and waste container so you **DO NOT** have to cross over the patient or yourself when discarding contaminated items.

4. Wash hands with soap and water or use a hand sanitizer with at least 60% alcohol; put on disposable gloves.

5. Instruct the parent/guardian to rest the leg of the infant in a downward position for about 30 seconds to allow blood flow to the foot. If the patient's foot is cold, warm the foot:
    1. Gently massage the foot/heel a few times from the base to the tip of the heel.
    2. Stroke the heel with gentle downward motion from the ankle to the toes.
    3. Ask the patient to briskly rub both hands together.
    4. Use a warm (not more than 105 degrees F.), moist towel on the heel for a couple of minutes.
    5. Ask the parent/guardian to wash child's foot/heel with warm water.

6. Select the heel for puncture.

    Note: Use **ONLY** the lateral or medial sides of the heel.

    Note: **DO NOT** use the plantar region of the foot or great toe.

7. **Do NOT** choose a puncture site on a heel that is callused, purple, scarred, swollen, or injured.

8. Get all microcuvettes ready and LABEL NOW!!! Use a #2 pencil or black Sharpie.

9. Clean the puncture site with an alcohol pad or benzylkonium chloride pad.
    a. Wipe in one direction ONLY!
    b. Allow the alcohol or benzylkonium chloride to evaporate.
    c. Do NOT blow on the finger or fan the area.

10. Do NOT saturate the site with alcohol.
    a. Remove excess alcohol with a clean gauze pad.
    b. Discard the used alcohol pad and wrapper in the regular trash can.

11. Allow the site to air dry completely.

12. Firmly hold the patient's heel between your thumb and index finger.

13. Puncture the site and dispose of the used lancet in the sharps container.
    a. Note: Puncture the heel with the lancet PERPENDICULAR to the ridge swirls on the heel.
    b. Place the lancet FIRMLY on the heel site BEFORE triggering the lancet.

14. Wipe away the first 2-3 drops of blood with the sterile gauze.

15. Apply gentle pressure every few seconds, about ½ inches from the puncture site.

16. Collect specimen in a microtube (bullet), or for dried blood spots, or a hemoglobin cuvette. LABEL NOW!!

17. Have patient apply pressure on the site for 2-3 minutes to prevent leakage of blood under the skin and formation of a hematoma. When site is no longer bleeding, a bandage may be applied if desired; elevate the leg higher than the heart.
    a. Ask the parent to hold the gauze on the puncture site.
    b. If the parent cannot do this, hold the heel elevated above the heart.

18. Label specimen tube (s) with proper patient identification information; if not already done when getting supplies together.
    a. Name of patient/client (first name and last name).

b. MCI number or other unique identification number.
c. Date collected, time collected and initials of person who collected specimen goes on the requisition/lab form.
d. Note: if you use a HemoCue microcuvette, the frosted edge needs to have patient's last name at least and the date.

19. Complete ALL information on the test request/lab requisition form(s): DHEC 1332/1335.
    a. Name of patient/client (first name and last name).
    b. MCI number or other unique identification number.
    c. Date collected, time collected and initials of person who collected specimen.
    d. Test required
    e. Type of specimen
    f. Ordering physician, APRN, RN, DIS
    g. Test(s) requested
    h. Sender Address or Sender code number
    i. Any specimen instructions or other important information
    j. Note: if you use a computer label, just add time and initials of person collecting specimen.
    k. Note: if you use a computer label, be sure to place the computer label with all demographic information on copy 1, copy 2 and copy 3.
    l. You will send the original top copy of the DHEC 1332/1335 with the specimen(s).
    m. Retain the third copy for your files in the County Health laboratory.

20. Properly dispose of lancets (in biohazard puncture proof sharps container) and other contaminated materials used during heelstick.

    a. Place all blood soaked material in the contaminated waste bag (Biohazard).
    b. Place all sharps in the sharps container and **DO NOT** fill above 2/3!
    c. **DO NOT** place any non-contaminated waste in the sharps container or Biohazard waste!

21. Remove PPEs in this order:
    a. Remove contaminated gloves.
    b. Wash hands with soap and water or with hand sanitizer with >60% alcohol.
    c. Remove any eye protection.
    d. Remove liquid impervious/resistant lab coat or apron.
    e. Wash hands with soap and water or with hand sanitizer with >60% alcohol.

22. BEFORE allowing the patient/client to leave, take the gauze off of the puncture site to ensure it has stopped bleeding.
    a. **DO NOT** wipe the area with gauze since this will initiate bleeding again (subcutaneous) and may cause a hematoma (bruise).

    b. **DO NOT** allow parent/patient to get up from the chair, table, etc. without being physically at the side or in front of the parent/patient: THIS IS A FALL PREVENTION MEASURE!

Special Procedural Notes for Dried Blood Spots:

1. When properly filled, the blood spot will be the same size on both sides of the filter paper.

2. **DO NOT** send the specimen if the circles are NOT completely filled—collect a second sample.

3. All the circles are needed. If tests have to be repeated or additional tests need to be run, all 5 circles are required.

Troubleshooting:

1. Failure to wipe off alcohol residue may dilute the specimen and adversely affect test results.

2. Puncturing the heel on posterior curvature will permit blood to flow away from puncture, making proper spotting difficult.

3. **DO NOT** lance on previous puncture site.

4. Use of a capillary tube is not recommended since application of blood with a capillary tube results in scratching and/or abrading the surface of the filter paper which adversely affects test results.

5. Avoid touching area within filter paper circles before blood is applied.

6. **DO NOT** place filter paper in the envelope until thoroughly dry.

7. INSUFFICIENT DRYING ADVERSELY AFFECTS TEST RESULTS!

QuantiFERON-TB Gold Plus (QFT-Plus) Collection Procedure

Principle:

To properly collect a blood specimen for QuantiFeron-TB Gold Plus.

Supplies:

1. 4 QFT tubes
2. DHEC form 1335
3. Designated QFT shipper

Collection Procedure:

Precaution: Wear gloves when collecting blood samples

1. For each patient, collect 1mL of blood by venipuncture directly into each of the QFT-Plus blood collection tubes (4 tubes total).
    a. As 1 mL tubes draw blood relatively slowly, keep the tube on the needle for 2-3 seconds once the tube appears to have completely filled, to ensure that the correct volume is drawn. *Note: The black mark on the side of the tubes indicates 1mL fill volume. QFT-Plus blood collection tubes have been validated for volumes from 0.8 mL- 1.2 mL. If the level of blood is outside the indicator line, it is recommended to obtain another blood sample.*
    b. If a butterfly needle is being used to collect blood, a "purge" tube should be used to ensure that the tubing is filled with blood prior to the QFT-Plus tubes being used.
2. Immediately after filling tubes, shake them ten (10) times just firmly enough to ensure the entire inner surface of the tube is coated with blood to dissolve the antigens on the tube walls
    a. Tube temperature should be between 17-25°C at the time of blood tube filling.
    b. Overly vigorous shaking may cause gel disruption and could lead to aberrant results.
3. Label tubes appropriately.
4. The tubes must be transferred to a 37°C ± 1°C incubator as soon as possible, and within 16 hours of collection. Prior to incubation, maintain the tubes at room temperature (22°C ± 5°C). Do not refrigerator or freeze the blood samples. *Note: There are incubators located at specific sites in the regions, or samples can be placed on courier for incubation, **HOWEVER** samples must be received within the acceptable 16 hours post-collection if incubation is to occur at the Public Health Laboratory.* If the blood is not incubated immediately after collection, re-mixing of the tubes by inverting 10 times must be performed immediately prior to incubation at 37°C.
5. Incubate the tubes **UPRIGHT** at 37°C ± 1°C for 16-24 hours.
6. After incubation at 37°C, blood collection tubes may be held between 4-27°C for up to 3 days before further testing. Specimens should be shipped to the Virology laboratory using the courier system in the designated boxes within the 3 day post-incubation time period.

Specimen Handling:

1. Use a patient label to properly label each QFT-Plus tube.
2. Complete a DHEC 1335. See instructions on back of form for completing. Mark QuantiFeron Gold-Plus and complete incubation start and end time.

Specimen Preservation and Transport:

1. Specimens should be shipped and received within 16 h
2. ours of collection if not incubated in regions or within 3 days post-incubation.
3. Place the specimen inside designated QFT-Plus shipper (large white shipper with pink label) and ship at room temperature (17-25°C) via the state courier system.

Specimen Rejection:

1. Universal Rejections, See Section 1
2. Use of improper collection techniques and/or under- or over-filled collection tubes.
3. Sample not incubated within the proper incubation period after collection (samples under- or over-incubated) or samples requiring incubation at 37ºC are not received at the Public Health Laboratory within 16 hours of collection.

ENTERIC PATHOGENS

Purpose:

To properly collect a stool specimen for the isolation of the following enteric pathogens: *E coli 0157, Salmonella, Shigella, Yersinia, Campylobacter, Vibrio, Staphylococcus, Clostridium perfringens and Bacillus cereus.*

Patient Preparation:
No special preparation.

Supplies:
1. Wide-mouthed container.
2. Enteric kit with Cary-Blair transport media. See Page III-1 to order.
3. DHEC form 1335

Collection Precautions:
Wear gloves when collecting stool specimens.

Collection Procedure (Stool):
1. Collect stool in a clean (not necessarily sterile) wide-mouthed container with a tight-fitting lid. These containers must be free of preservatives and detergents.
2. **Do not collect specimen from toilet. Avoid contamination with urine**.
3. Infant specimens may be collected in a disposable diaper with plastic side facing inside.
4. Collect a walnut sized piece if stool is formed or 5-10 ml if stool is liquid.

Cary-Blair Transport media

Formed feces: use tongue depressor or spoon inside the lid to transfer walnut size portion of stool. Liquid feces: use pipette to transfer 5-10 ml of liquid stool to the transport media. Replace cap on tube and refrigerate until transported.

Specimen Handling:
1. Place a patient identification label on the transport medium
2. Complete a DHEC form 1335 to accompany specimen. See instructions on back of form. Be sure to complete additional test specific information

   Specimen Type/Source: Mark X by Feces Date Collected
   Organism Suspected: Indicate name of suspected organism
   NOTE: Routine culture includes testing for Salmonella, Shigella, Campylobacter, and E. coli 0157. Request for other specific pathogens must be indicated on the laboratory request form.
   Test Requested: Mark 508 Enteric Culture.

Specimen Preservation and Transport:
1. Ship specimens in transport media in cooler with cold packs. Specimen should be received within 48 hours of collection.
2. See Section IV for appropriate shipping container, packaging and transport instructions.

Specimen Rejection:
1. Specimen too old.
2. Use of improper transport media or transport conditions.
3. Insufficient quantity
4. Universal rejections, See Section I

NEISSERIA GONORRHOEAE

Principle:

To properly collect an eye culture, rectal culture and oropharyngeal culture for the diagnosis of *Neisseria gonorrhoeae*. To properly collect a cervical, urethral and vaginal culture in cases of assault or sexual abuse.

Patient Preparation:

For male urethral culture: The patient should not have voided for at least 1 hour before performing a culture, especially men without a discharge.

Supplies:

1. Sterile Dacron or Rayon swab
2. Sterile thin, flexible wire with Dacron or Rayon swab (males)
3. GC culture kit with Transgrow bottle for *N. gonorrhoeae* See Page III-1 to order.
4. DHEC form 1335
5. Speculum (cervical, vaginal)

Collection Precautions: (All specimens)

Wear disposable gloves And protective eye wear when collecting and handling specimens.
Note: Collect all specimens Monday - Wednesday. Do not ship for weekend delivery.

Collection Procedure: (Eye)

1. Touch a sterile swab to purulent discharge. If necessary, lower eyelid may be pulled down and the swab touched to the conjunctival mucosa.
2. Inoculate Transgrow bottles as described under Inoculation of Transgrow medium

Collection Procedure: (Rectal)

1. Have the patient bear down slightly for ease in insertion of swab.
2. Insert a sterile swab approximately 3 cm into the anal canal using lateral pressure to avoid entering any fecal mass. If gross fecal contamination of the swab occurs, it should be discarded into a biohazard container and a repeat specimen obtained.
3. Rotate the swab to sample crypts just inside the anal ring and allow the swab to remain in the anal area for several seconds for better absorption onto the swab.
4. Inoculate Transgrow bottles as described under Inoculation of Transgrow medium.

Collection Procedure: (Oropharyngeal [Throat])

1. Using a tongue blade to hold the tongue down, take a specimen directly from the back of the throat, carefully avoiding contact with teeth, cheeks, gums or tongue when inserting or removing the swab.
2. Rub a sterile swab over the back wall of the throat and tonsillar crypts.
3. Inoculate Transgrow bottles as described under Inoculation of Transgrow Medium.

Collection Procedure: (Cervical)

1. Obtain the cervical specimen with the aid of a speculum that has been moistened with water. Other lubricants may contain antibacterial agents.
2. Insert the speculum and if unable to visualize the cervical os, remove excess mucus with swab.
3. Insert another sterile swab into the endocervical canal approximately 2-3 cm. Move the swab in a rotary motion for a few seconds to permit absorption of the exudate. If the patient is pregnant, and there has been no vaginal bleeding, insert swab into the endocervix only until the tip is no longer visible and rotate gently for a few seconds).
4. Inoculate Transgrow bottles as described under inoculation of Transgrow medium.

Collection Procedure: (Vaginal) for Children and Hysterectomy Patients Only

1. Insert the speculum.
2. With a sterile swab obtain the specimen from the posterior vaginal vault.
3. Allow a few seconds for absorption of material.
4. If the hymen is intact, a swab of the vaginal orifice will suffice.
5. Inoculate Transgrow bottles as described under Inoculation of Transgrow medium.

Collection Procedure: (Urethral Culture - Females)

1. Massage the urethra against the pubic symphysis from vagina to orifice to express discharge.
2. If no discharge is evident, insert a sterile flexible thin wire swab approximately 2 cm into the urethra and rotate for several seconds.
3. Withdraw swab and inoculate Transgrow bottle as described under Inoculation of Transgrow

Collection Procedure: (Urethral - Males)

1. Insert a sterile flexible swab with a thin wire shaft 2-4 cm into the urethra.
2. Once inserted, rotate the swab gently to ensure contact with all urethral surfaces.
3. Leave inserted for 2-3 seconds for better absorption of material.
4. Withdraw swab and inoculate Transgrow bottle as described under Inoculation of Transgrow.

Inoculation of Transgrow Medium

1. Have Transgrow at **room temperature; check the expiration date** before inoculation.
2. Hold the bottle in an upright position. Remove the cap only when ready to inoculate.
3. Soak up excess moisture in the bottle with the specimen swab and roll the swab from side to side over the entire surface of the medium starting at the bottom of the bottle.
4. Remove swab from bottle and discard into a biohazard container.
5. Recap the bottle tightly.

Specimen Handling:

1. Place label with patient's name on back of Transgrow bottle where chocolate colored medium is layered. **Do not place label on clear side of bottle**. This window is needed to observe growth.
2. Complete a DHEC form 1335 to accompany specimen. See instructions on back of form. Be sure to complete test specific information.

   Specimen: Mark X by the appropriate type and write in the site.
   Was Culture Incubated Before Transport?: mark X in the appropriate space(s).
   Test Requested: Mark X in the appropriate space.

Specimen Preservation and Transport:

1. Place the Transgrow bottle in an upright position in an incubator set at 35°C as soon as possible after inoculation. **Never refrigerate the medium after inoculation as cold temperature will rapidly kill gonococci.** Incubate until ready to ship,
2. If an incubator is not available, make sure culture is shipped on the same day as collected.
3. If the specimen is collected on Friday and cannot be shipped until Monday, incubate over the weekend, but remove first thing Monday morning to prevent contaminant overgrowth.
4. Note: Do not ship for weekend delivery.

Specimen Rejection:

1. Transgrow media not used or Transgrow media expired.
2. Specimen in transit for more than 5 days.
3. Universal rejections, See Section I.

DIPHTHERIA

Principle:
To properly collect a throat swab for the culture of *C. diphtheria*

Patient Preparation:
No special preparation

Supplies:
1. Culturette swab kit containing Stuart's medium. Use form 1323 to order and indicate culturette in blank space on form.
2. DHEC form 1335

Collection Procedure for Throat Swab:
1. Shine a bright light if possible over the shoulder of the specimen collector into the oral cavity of the patient so that the swab can be guided to the posterior pharynx.
2. The patient is instructed to tilt his/her head back and breathe deeply.
3. Depress the tongue with a tongue depressor to help visualize the posterior pharynx. Use culturette kit. Do not use calcium alginate swabs.
4. Extend the swab to the back of the throat between the tonsillar pillars and behind the uvula.
5. Have the patient phonate a long aah which will lift the uvula and help to prevent gagging.
6. The tonsillar areas and posterior pharynx should be firmly rubbed with the swab.
7. Care should be taken not to touch the teeth, cheeks, gums or tongue when inserting or removing the swab to minimize contamination with normal mouth flora.
8. After collection, place the swab back into the culturette and break or squeeze the ampule. Note: Notify the DHEC Bacteriology Section (803-896-0805) when a diphtheria specimen is to be collected so that special isolation media can be prepared.

Specimen Handling
1. Place a patient label on a culturette swab kit.
2. Organism suspected: Indicate *Corynebacterium diphtheriae*.

Specimen Preservation and Transport
1. Store and ship culturette at room temperature. Note: Transport within 24 hours. Do not ship for weekend delivery.
2. See Section IV for appropriate shipping container, packaging and transport instructions.

Specimen Rejection
1. Ampule in culturette not crushed.
2. Universal rejections, See Section I.

MYCOBACTERIUM (TB)

Principle:
To properly collect a sputum or urine specimen for the diagnosing and monitoring of tuberculosis and other mycobacterial infections.

Supplies:
1. (a) Mycobacteriology collection kit (50 ml plastic sputum collection tube, metal can and cardboard mailing container) See Page III-1 to order.
   (b) Sterile screw cap container with a round opening of at least 2 inches for urine
2. DHEC form 1335
3. Particulate respirator (PR)

Collection Procedure: (All Specimens)
Wear Disposable Gloves and a Particulate Respirator When Collecting Specimens

Patient Preparation: (Sputum)
1. Explain to patient the importance of how to collect and handle a sputum specimen. Give the patient the sputum collection kit and COLLECTION OF SPUTUM SPECIMENS FOR MYCOBACTERIA (TB) sheet.
2. If the nurse must remain with the patient while he/she is coughing, the nurse should wear a particulate respirator.
3. Have the patient collect an early morning sputum sample.
4. Ask the patient to breathe deeply, exhale, and then cough deeply. Steam from a hot shower or a boiling kettle may help to stimulate the flow of secretions. Also, drinking several cups non alcoholic liquids will assist in raising sputum.
5. Patient should brush his/her teeth and/or rinse with water, not an antiseptic solution before obtaining the sputum specimen to reduce the overgrowth of mouth flora,
6. The patient should submit a series of three (3) sputum samples over a period of three days (one/day), if specimens are being collected for initial diagnosis.

Collection Procedure (Sputum)
1. Remove the cap from the sterile container without touching the inside of the container. This will avoid contamination of the specimen which results in having to submit another specimen.
2. Patient is instructed to take a deep breath, hold it momentarily and cough deeply from the deepest part of the chest. Saliva and nasal secretions which contain few acid-fast bacteria are not to be collected.
3. Instruct the patient to spit the sputum into the appropriate sterile container until at least 5 ml or 1 teaspoon is obtained. Replace cap on the container. A minimum of 5 ml is needed for culture.
4. Avoid soiling the outside of the container. If soiling does occur, wipe with a clean cloth wet with alcohol soap and water, or 1:10 bleach solution, and then wash hands.
5. Sputum specimens should be free of food particles and other extraneous material.
6. Place the cap on plastic tube or sterile container and screw to close tightly.

If patient is to collect sputum in the home, give patient sputum collection and mailing containers and instruction sheet on how to obtain a sputum sample.

Collection Procedure: (Urine)

The patient should submit a series of three (3) urine samples over a period of three days (one/day) if specimens are being collected for initial diagnosis.

Female- midstream voided:

1. Have patient thoroughly clean the urethral area with soap and water.
2. Instruct patient to sit on toilet, and to manually separate labia minora with one hand and keep them separated while voiding the first portion of urine into the toilet.
3. After several ml have passed, have patient collect the midstream portion into the specimen container without stopping the flow of urine. Try to avoid touching the lip or inside of the container with the hand.
4. Have the patient finish voiding into the toilet.
5. Amount of urine needed is 10 ml. Screw cap on plastic tube to close tightly.

Male-midstream voided:

1. Clean the glans with soap and water.
2. While holding foreskin retracted, begin voiding.
3. After several ml have passed collect the midstream portion into the appropriate container without stopping flow of urine.
4. Have the patient finish voiding into the toilet.
5. Amount of urine needed is 10 ml. Screw cap on plastic tube to close tightly.

For collection procedures on other specimens see chart on Collection and Shipment of Mycobacterial Specimens.

Specimen Handling:

1. Place a patient identification label on the 50 ml screw capped tube.
2. Complete a DHEC form 1335 to accompany specimen See instructions on back of form. Be sure to complete test specific information:

   Agent suspected: Enter the suspected agent
   Specimen source: Mark "X" by the appropriate source.
   Date & Time Collected:
   NOTE: All clinical specimens should be ordered using Test Code 601. Test Code 602 is reserved exclusively for laboratories that have isolated Mycobacteria and need them identified. Do not request drug susceptibility testing (Test Code 604) when submitting specimens from suspected new cases of tuberculosis. All initial isolates of M. tuberculosis will be tested for susceptibility to INH, rifampin, ethambutol, streptomycin and pyrazinamide.

Specimen Preservation and Transport: Sputum:

1. Refrigerate samples if shipping is delayed over 24 hours. This will decrease overgrowth of other microorganisms which delay culture results.
2. Place the collection tube in the metal can and close screw cap securely. Be sure neither plastic tube nor metal can are soiled with sputum or urine.
3. Wrap the completed DHEC 1335 laboratory form around the metal can. Be sure the date the specimen was collected is on the form. If the laboratory form is around the plastic tube instead of the metal can the laboratory must autoclave it before it can be handled.
4. Place the metal can in the pre-addressed, round cardboard mailing container
5. Mail specimen on the day it was collected, if possible, but do not mail specimen on Fridays. Refrigerate the carton until mailed.

Specimen Preservation and Transport Urine.

1. If specimen is urine, ship cold with cold packs.
   Place a plastic bag over the fiberboard carton and place in a Styrofoam cooler with cold packs for transportation.
2. Label outside of cooler as Urine for TB testing

Specimen Rejection:

1. Specimen broken or leaked in transit. Sterile body fluids may be processed with the approval of the Supervisor or Division Director.
2. Specimen > 5 days old.
3. Universal rejections, See Section I

SPECIMEN COLLECTION FOR CULTURE OF MYCOBACTERIA (TB)

SPECIMEN TYPE	TIME	AMOUNT	NUMBER	SPECIAL PROCEDURE
Sputum	Early AM On Waking	5-10 ml.	Series of 3 One/Day	Sputum-material coughed up from deep in lungs-not saliva
Urine	Early AM	Entire specimen, centrifuge 10 ml.	Series of 3 One/Day	Voided midstream specimen collected as aseptically as possible. Transport to lab immediately.
Gastric Washing	Early AM	10 ml.	1 or more as needed	No food after midnight. Pass 20-50 ml. sterile distilled water through stomach tube and draw off specimen in sterile tube.
Biopsy				No fixative or preservatives (saline only)
Feces		Formed-send walnut sized portion Liquid-send 10 ml.	1 or more as needed	
Sterile body fluids other than blood		10 ml.	1 or more as needed	
Swabs of drainage or other material				Use small amt of sterile saline to keep swab moist. **Do not use transport media. Swabs are not usually productive specimens for mycobacteria.**

Use a Mycobacteriology (TB) collection kit for all specimen types

Viral Media Collection for Virology Samples

Principle:
To properly collect a buccal swab, anogenita swab, throat swab, NP swab, rectal swab, lower or upper respiratory specimen.

Patient Preparation:
No special preparation.

Supplies:
1. Swab with polyester tip. **Do not use calcium alginate swab or wooden shaft swab.**
2. Viral transport media. Store transport media at 2-25ºC until needed.
3. DHEC form 1335

Collection Procedure for Swab (NP, Throat, Buccal, Rectal, Anogenital Lesions, and/or Ulcers):
1. Swab desired area with appropriate polyester tipped swab.
2. Remove swab and immediately place into viral transport media. Break off swab shaft and close viral transport media container tightly.

Collection Procedure for CSF, lower respiratory, upper respiratory
1. Place fluid into sterile container. Fluid does not need to be placed into viral transport media or saline.

Specimen Handling:
1. Place a patient label on vial of viral transport media.
2. Complete a DHEC form 1335 to accompany specimen. See instructions on back for completing. Be sure to complete test specific information:
   Specimen: Mark X in the appropriate space. If Other is marked, enter specimen site.
   Date of Onset: Enter month, day and year.
   Symptoms: Mark each symptom that applies. If Other is marked, write in symptom(s).
   Test Requested: Mark X in the appropriate space.
   Virus Suspected: Enter name of virus suspected.

Specimen Preservation and Transport
1. Store and ship viral transport tubes cold with cold packs. Specimens should be received within 72 hours after collection, ship frozen if specimen will be received more than 72 hours from collection.
2 Fluids should be shipped cold with cold packs. Specimens should be received within 72 hours after collection, ship frozen if specimen will be received more than 72 hours from collection.
3. See Section IV for appropriate shipping container, packaging and transport instructions.

Specimen Rejection
1. Use of calcium alginate swabs.
2. Use of wooden shaft swabs.
3. Universal rejections, See Section I.

CHLAMYDIA/GC & TRICHOMONAS VAGINALIS by GEN-PROBE APTIMA

(Endocervical, Male Urethral, Male/Female Rectal, Pharyngeal, Vaginal, Urine Specimens)

Principle:

To collect and appropriately handle specimens for nucleic acid amplification testing for Chlamydia, Gonorrhoeae, and Trichomonas vaginalis.

Patient Preparation:

See collection procedures below.

Supplies:

1. GC/ Chlamydia/Trichomonas Gen-Probe supplies See Page III-1 to order.
   For Unisex Collection Kit, the blue swab is the specimen collection swab for both male and female specimens.
2. DHEC form 1332

Collection Procedure for Endocervical Swab Specimens (FOR GC/CT/TRICH TESTING):

1. The clinician collects the specimen from the cervical and endocervical area using the APTIMA Unisex Swab (green printing) designed to collect endocervical and urethral specimens for APTIMA/TIGRIS assay. **Please use the blue shaft swab for collection.**
2. Remove excess mucus from cervical os and surrounding mucosa using cleaning swab (white shaft in package with red printing). **Discard this swab!!!**
3. Insert specimen collection swab (blue shaft) into endocervical canal.
4. Gently rotate swab clockwise for 10 to 30 seconds in endocervical canal to ensure adequate sampling.
5. Withdraw swab carefully; avoid any contract with vaginal mucosa.
6. Remove foil cap from swab specimen transport tube and immediately place specimen collection swab into the transport tube.
7. Break off the swab at the scoreline. Use care to avoid splashing contents.
8. Re-cap swab specimen transport tube tightly.
9. Place a label with patient name, date taken, and anatomic site (cervical, Cx) on the tube.
10. Complete a laboratory test requisition for each specimen with the test(s) requested and the appropriate anatomic site (cervical, Cx) indicated on the form.
11. Specimens can be stored in the refrigerator or at room temperature, between 2-30^{o} C, prior to transport to the Public Health Laboratory, 8231 Parklane Road, Columbia, SC 29223.
12. Specimens need to be stored in an upright position in a rack so that the buffer is in contact with the swab.
13. The specimen is good for 60 days.
14. If longer storage is needed, freeze at -20 to -70 degrees C for up to 12 months after collection.

Collection Procedure for Vaginal Specimens (FOR GC/CT/TRICH TESTING):

1. The clinician collects the specimen from the vaginal area using the APTIMA MTS (Multitest) Swab (orange label, also known as vaginal swab) designed to collect vaginal specimens for APTIMA/TIGRIS assay. **Please use the pink shaft swab for collection.**
2. Carefully insert the swab into vagina about 2 inches inside the opening of the vagina and gently rotate swab 10-30 seconds.
3. Make sure the swab touches the walls of the vagina so that the moisture is absorbed by the swab and then withdraw the swab without touching the skin.
4. Remove foil cap from swab specimen transport tube and immediately place specimen collection swab into the transport tube.
5. Break off the swab at the scoreline.
6. Tightly screw the cap onto the tube.
7. Place a label with patient name, date taken, and anatomic site (vaginal, vag) on the tube.
8. Complete a laboratory test requisition for each specimen with the test(s) requested and the appropriate anatomic site (vaginal, vag) indicated on the form.
9. Specimens can be stored in the refrigerator or at room temperature, between 2-30^{o} C, prior to transport to the Public Health Laboratory, 8231 Parklane Road, Columbia, SC 29223.
10. Specimens need to be stored in an upright position in a rack so that the buffer is in contact with the swab.
11. The specimen is good for 60 days.
12. If longer storage is needed, freeze at -20 to -70 degrees C for up to 12 months after collection.

The Aptima Vaginal Swab Specimen Collection Kit (pink shaft swab) should only be used for collection of females ≥ 14 years old and non-pregnant.

Collection Procedure for Male Urethral Specimens (FOR GC/CT TESTING ONLY):

Patient should not have urinated for at least 1 hour prior to collection.

1. The clinician collects the specimen from the urethral area using the APTIMA Unisex Swab (green printing) designed to collect endocervical and urethral specimens for APTIMA/TIGRIS assay. **Please use the blue shaft swab for collection.**
2. Insert the specimen collection swab (blue shaft swab in the package with the green printing) 2 to 4 cm into the urethra.
3. Gently rotate the swab clockwise for 2 to 3seconds in the urethra to ensure adequate sampling.
4. Withdraw the swab carefully.
5. Remove foil cap from swab specimen transport tube and immediately place specimen collection swab into the transport tube.
6. Carefully break off the swab at the scoreline. Use care to avoid splashing contents.
7. Re-cap the swab specimen transport tightly.
8. Place a label with patient name, date taken, and anatomic site (male urethral) on the tube.
9. Complete a laboratory test requisition (DHEC 1332) for each specimen with the test(s) requested and the appropriate anatomic site (male urethral) indicated on the form.
10. Specimens can be stored in the refrigerator or at room temperature, between 2-30^{o} C, prior to transport to the Public Health Laboratory, 8231 Parklane Road, Columbia, SC 29223.
11. Specimens need to be stored in an upright position in a rack so that the buffer is in contact with the swab.
12. The specimen is good for 60 days.
13. If longer storage is needed, freeze at -20 to -70 degrees C for up to 12 months after collection.

Collection Procedure for Pharyngeal Specimens (FOR GC/CT TESTING ONLY):

Since this collection kit is designed to collect endocervical specimens, included is a white shaft "cleaning" swab which is NOT to be used for pharyngeal or rectal specimen collection.

1. The clinician collects the specimen from the pharyngeal area using the APTIMA Unisex Swab (green printing) designed to collect endocervical and urethral specimens for APTIMA/TIGRIS assay. **Please use the blue shaft swab for collection.**
2. Swab area between the tonsillar pillars and the region posterior to the pillars.
3. Remove foil cap from swab specimen transport tube and immediately place specimen collection swab into the transport tube.
4. Break off the swab at the scoreline.
5. Place a label with patient name, date taken, and anatomic site (throat) on the tube.
6. Complete a laboratory test requisition for each specimen with the test(s) requested and the appropriate anatomic site (throat) indicated on the DHEC Form 1332.
7. Specimens can be stored in the refrigerator or at room temperature, between 2-30^{o} C, prior to transport to the Public Health Laboratory, 8231 Parklane Road, Columbia, SC 29223.
8. Specimens need to be stored in an upright position in a rack so that the buffer is in contact with the swab.
9. The specimen is good for 60 days.

Collection Procedure for Male/Female Rectal Specimens (FOR GC/CT TESTING ONLY):

Since this collection kit is designed to collect endocervical specimens, included is a white shaft "cleaning" swab which is NOT to be used for pharyngeal or rectal specimen collection.

1. The clinician collects the specimen from the rectal area using the APTIMA Unisex Swab (green printing) designed to collect endocervical and urethral specimens for APTIMA/TIGRIS assay. **Please use the blue shaft swab for collection.**
2. **Asymptomatic and/or Symptomatic Males/Females:** moisten swab with sterile saline/tap water and insert into anus and rectum approximately 2-5 cm (1 to 2 inches) and rotate 3-8 times. **NOTE: it is ok to have some fecal contamination that appears as a brown discoloration but NO frank fecal material.**
3. Remove foil cap from swab specimen transport tube and immediately place specimen collection swab into the transport tube.
4. Break off the swab at the scoreline.
5. Place a label with patient name, date taken, and anatomic site (rectal, rec) on the tube.
6. Complete a laboratory test requisition for each specimen with the test(s) requested and the appropriate anatomic site (rectal, rec) indicated on the form.
7. Specimens can be stored in the refrigerator or at room temperature, between 2-30^{o} C, prior to transport to the Public Health Laboratory, 8231 Parklane Road, Columbia, SC 29223.
8. Specimens need to be stored in an upright position in a rack so that the buffer is in contact with the swab.
9. The specimen is good for 60 days.

Collection Procedure for Male and Female Urine Specimens (FOR GC/CT/TRICH TESTING):

Patient should not have urinated for at least 1 hour prior to specimen collection.

1. Direct patient to provide first-catch urine (approximately 20 to 30 ml of initial urine stream) into urine collection cup free of any preservatives. Collection of larger volumes of urine may result in specimen dilution that may reduce test sensitivity. Female patients should not cleanse labial area prior to providing specimen.

2. Remove cap from urine specimen transport tube and transfer 2 ml of urine into urine specimen transport tube using disposable pipette provided. The correct volume of urine has been added when fluid level is between black fill lines on urine specimen transport tube label.
3. Re-cap urine specimen transport tube tightly. This is now known as the "processed urine specimen."
4. See *Specimen Transport and Storage* below.

Specimen Handling:

Complete DHEC form 1332 to accompany specimen See instructions on back for completing. Be sure to complete test specific information**.**

Specimen Preservation and Transport

A. Swab

1. After Collection, transport and store swab in swab specimen transport tube at 2°C to 30°C until tested.
2. Specimens must be assayed within 60 days of collection. If longer storage is needed, freeze at -20°C to -70°C for up to 12 months after collection.

B. Urine

1. After collection, transport the processed urine specimens in the GEN-PROBE Aptima Assay urine specimen transport tube at 2°C or 30°C and store at 2°C or 30°C until tested. Processed urine specimens should be assayed with the APTIMA Assay within 30 days of collection. If longer storage is needed, freeze at -20°C -or-70°C for up to 90 days after collection.
2. Urine samples that are still in primary collection container must be transported to lab at 2°C or 30°C. Transfer urine sample into APTIMA Assay urine specimen transport tube within 24 hours of collection. Store at 2°C or 30°C and test within 30 days.
3. See Section IV for appropriate shipping container, packaging and transport instructions.

Specimen Rejection:

1. No swab in tube, 2 swabs in tube, or improper (non-blue) swab used.
2. Universal rejections, See Section I, *SCDHEC, Public Health Laboratory Services Guide*.
3. Note: specimens collected with this system cannot be used for culture.

References:

1. Probetec Swab Specimen Collection and Handling by Campbell, D., SFDPH Micro Lab and Engelman, J., M.D., City Clinic, 1/2002.
2. APTIMA Swab Specimen Collection Guide; Gen-Probe Incorporated, San Diego, CA 92121.
3. City and County of San Francisco, Dept. of Public Health, City Clinic Branch Laboratory, revised 10/09.

SKIN SCRAPINGS FOR SCABIES

Principle:

Diagnosis of scabies can be confirmed by demonstration of the mites, eggs or scybala (fecal pellets). Because the mites are located under the surface of the skin, scrapings must be taken from the infected area.

Supplies:

1. Mineral oil
2. Sterile scapel blade
3. Clean glass slide and coverslip
4. Applicator stick
5. DHEC form1335
6. Cardboard slide mailer (holds 2 slides)
7. Biohazard bag

Safety Precautions:

Specimens must be handled with care**. *Sarcoptes scabei* is highly contagious. Wear gloves and lab coat while collecting specimens.**

Collection Procedure:

1. Place a drop of mineral oil on a sterile scalpel blade. (Mineral oil is preferred over potassium hydroxide solution or water. Mites will adhere to the oil and oil will not dissolve fecal pellets).
2. Allow some of the oil to flow onto the papule.
3. Scrape vigorously six or seven times to remove the top of the papule. (There will be tiny flecks of blood in the oil).
4. Transfer the oil and scraped material to a glass slide. (An applicator stick can be used).
5. Add **one or two drops** (no more than 2) of mineral oil to the slide and stir the mixture.
6. Place a cover slip on the slide.

Specimen Handling:

1. Place a patient identification label on the edge of the glass slide
2. Complete DHEC form 1335 to accompany specimen. See instructions on back for completing.

Specimen Preservation and Transport:

1. Place slide(s) in cardboard slide mailer. or plastic slide box (not supplied)
2. Secure mailer with rubber band and place mailer in Biohazard bag.
3. Store and ship at room temperature
4. See Section IV for appropriate shipping container, packaging and transport instructions.

Specimen Rejection:

1. Too much oil used (more than 2)
2. Universal rejections, See Section I

Section IV
Transporting and Shipping Infectious Substances
(Updated August 2020)

Introduction
Patient specimens from most of the SC Health Departments and many of the SC hospitals are transported to the SC DHEC Public Health Laboratory through a DHEC contracted courier system. This courier system picks up and delivers courier mail to over 60 DHEC health departments and locations throughout the state every evening.

For the protection of employees and the public, patient specimens and infectious substances must be properly packaged and labeled. As packages delivered using this courier system are transported in commerce, they must be packaged to meet all DOT requirements for shipping infectious substances. Failure to follow these regulations can result in injury, exposure, and/or fines.

Regulatory Requirements
There are three regulatory entities regarding the shipping of hazardous materials; the International Air Transporters Association (IATA), the United States Department of Transportation (USDOT), and the United States Postal Service (USPS). According to regulations, it is the **shipper's responsibility** to properly package shipments of infectious substances and hazardous materials.

The International Air Transporters Association (IATA) is a private organization whose regulations only apply to air transport by IATA member airlines. All major airlines are members of IATA and follow the IATA *Dangerous Goods Regulations* taken from the International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air.

The United States Department of Transportation (US DOT) is a government agency that regulates commercial transport. Commercial transport takes place when money is exchanged for a good or service. All modes of transportation, ground, air, and water, fall under DOT regulations. US DOT regulations are located in the Code of Federal Regulations 49 CFR 173. Updates to these regulations require congressional approval and are not frequently updated.

The United States Postal Service (USPS), has their own regulations found in the domestic mail manual. As one federal agency cannot regulate another federal agency, the USPS is not required to follow US DOT regulations. As an example, the Postal Service can transport cylindrical shippers while a private courier, like Fedex, cannot.

In addition to these regulations, private couriers can have additional regulations. As an example, Federal Express requires that a shippers declaration for Dangerous Goods be typed and not hand written.

The US Department of Transportation (DOT) and the US Postal Service (USPS) harmonized their regulations with the International Air Transporter Association (IATA) regulations in 2006. Therefore, if infectious substance is packaged and labeled to meet the IATA regulations, the package will meet or exceed the requirements for US DOT and the US Postal Service. In addition to providing uniformity, this harmonization allowed the regulations to be more adaptive. As IATA is a private organization, it has the ability to change its regulations without congressional approval.

Training Requirements

All employees who are a part of any step of classifying, packaging, labeling, marking, completing the paperwork, or transporting the specimen must be properly trained to package and ship infectious substances. Training records must be retained for a minimum of thirty-six months. Retraining must be completed every two years from the date of completion for IATA regulations and every three years for DOT regulations.

The training must include:

- An overview of the regulatory requirements
- Security awareness training
- Function specific training on the activities the employee will be responsible for, such as classification of infectious substances, packaging, labeling the outside container and completing shipping documentation.
- Safety training to include understanding the hazards of the infectious agent, safe handling and emergency response procedures.

The employer must certify the employees training as adequate and maintain a record of training which includes:

- The individual's name
- The most recent training completion date
- A description, copy or reference to training materials used
- The name and address of the organization providing the training
- A test, which was completed satisfactorily, to verify the employee understood the training.

Exemptions

Exempted Materials

The following items are exempt from the shipping regulations for infectious substances, but must be packaged to avoid leaking during shipping and may require a special label.

- Specimens/samples in which all pathogens have been neutralized or inactivated
- Specimens/samples **known** to not contain infectious substances
- Specimens/samples which only contain micro-organisms which are non- pathogenic for humans and animals
- Dried blood spots and fecal occult blood samples
- Environmental samples (food and water) that are not considered to pose a significant health risk
- Organs for transplant and blood for transfusion

Private Courier Exemptions

An exemption called the "materials of trade exemption," located at 49 CFR 173.6, is commonly used by hospital and DHEC employees. This exemption has multiple parts, but the part most useful for the transport of infectious substances is the following: "a hazardous material transported on a motor vehicle, by a private carrier in direct support of a principle means of business that is other than transportation by motor vehicle." This exemption does not apply to all hazard classes and there are quantity limits to those materials that are allowed. For infectious substances, this exemption only applies to category B samples.

So, a hospital courier or DHEC employee that transports samples to the health department, can use this exemption, because their principle business is not the transportation of samples but the care and treatment of patients or the community. Therefore, these regulations listed above do not apply to the transport of category B infectious substances transported by a hospital courier or DHEC employee transporting samples to a health department.

However, in order to protect the safety of the employee and the public, DHEC employees and other entities shipping specimens through the DHEC contracted courier must follow all of the regulations for proper shipping described in further pages. Additionally, secure the package in the vehicle as far away as possible from the driver as possible, preferably in the trunk if available. If there is an accident, emergency responders need to know that infectious substances are in the package.

Definitions:

BIOLOGICAL PRODUCTS: Are those products derived from living organisms which are manufactured and distributed in accordance with the requirements of appropriate national authorities, which may have special licensing requirements, and are used either for prevention, treatment, or diagnosis of disease in humans or animals, or for development, experimental or investigational purposes related thereto. They include, but are not limited to, finished or unfinished products such as vaccines.

CARBON DIOXIDE, SOLID (DRY ICE): Carbon dioxide, solid (dry ice) is produced by expanding liquid carbon dioxide to vapor and "snow" in presses that compact the product into blocks. It is used primarily for cooling and due to its very low temperature (about -79 C) can cause server burns to skin upon direct contact. When Carbon dioxide, solid (dry ice) converts (sublimates) directly to gaseous carbon dioxide it takes in heat from its surroundings. The resulting gas is heavier than air and can cause suffocation in confined areas as it displaces air. Packages containing Carbon dioxide, solid (dry ice) must be designed and constructed so as to prevent build-up of pressure due to the release of carbon dioxide gas.

CONSIGNEE: Any person, organization or government which is entitled to take delivery of a consignment.

CULTURES: Cultures are the result of a process by which pathogens are intentionally propagated. This definition does not include patient specimens as defined in 3.6.2.1.4.

DANGEROUS GOODS: Articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of dangerous goods in these Regulations or which are classified according to the Regulations.

EXCEPTION: A provision in these Regulations which excludes a specific item of dangerous goods from the requirements normally applicable to that item.

EXEMPTION: Authorization issued by an appropriate national authority of all States concerned providing relief from the provisions of these Regulations.

INFECTIOUS SUBSTANCES: are substances which are known or are reasonably expected to contain pathogens. Pathogens are defined as microorganisms (including bacteria, viruses, rickettsiae, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.

INNER RECEPTACLE: Are receptacles which require an outer packaging in order to perform their containment function.

OVERPACK: An enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage. Dangerous goods packages contained in the overpack must be properly packed, marked, labeled and in proper condition as required by these Regulations. For cooling purposes, an overpack may contain Carbon dioxide, solid (dry ice), provided that the overpack meets the requirements of Packing Instruction 954. (A Unit Load Device is not included in this definition.)

PACKAGE: (Non-Radioactive Material). The complete product of the packing operation consisting of the packaging and contents prepared for transport.

PACKAGING: (Non-Radioactive Material). Receptacles and any other components or materials necessary for the receptacle to perform its containment function and to ensure compliance with the minimum packing requirements of these Regulations.

PACKING: The art and operation by which articles or substances are enveloped in wrappings and/or enclosed in packaging or otherwise secured.

PATIENT SPECIMENS are those collected directly from humans or animals, including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluid swabs, and body parts being transported for purposes such as research, diagnosis, investigational activities, disease treatment and prevention.

PROPER SHIPPING NAME: The name to be used to describe a particular article or substance in all shipping documents and notifications and, where appropriate, on packaging.

RECEPTACLE: A containment vessel, including closures, for receiving and holding substances or articles.

SELECT AGENT: microorganisms or toxins, identified by a panel of experts, which could be used for bioterrorism. A complete list of select agents and toxins may be found on the Select Agent Program's web page http://www.cdc.gov/od/sap/docs/salist.pdf

SHIPMENT: The specific movement of a consignment from origin to destination.

UN NUMBER: The four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods to identify a substance or a particular group of substances. (The prefix "UN" must always be used in conjunction with these numbers.)

Classifying Infectious Substances

Infectious substances are divided into 2 categories – A and B. If you need assistance with classifying the materials you are shipping, please call the testing section which performs the test you are requesting.

Category A

An infectious substance which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease in otherwise healthy humans or animals.

Indicative examples of substances that meet these criteria are given in Table 3.6.D from the IATA Dangerous Goods Regulation (see next page). This table is not exhaustive. New or emerging pathogens, which do not appear in the table but which meet the same criteria must be assigned to category A.

In this table, organisms listed with the words "cultures only" indicate that clinical specimens known to contain that organism can be shipped as category B. As an example, Ebola is not listed with "cultures only." Therefore specimens known to contain Ebola must be shipped as Category A.

Other Examples of Category A infectious substances:

- Known culture of a Select Agent
- Known culture of *Escherichia coli* (toxigenic)
- Known culture of *Neisseria meningitidis*
- Known culture of *Mycobacterium tuberculosi*s
- Samples or cultures suspected to be Select Agents or BSL-3 organisms. (As an additional precaution and requested by the PHL)

Category B

An infectious substance which does not meet the criteria for inclusion in Category A.

Examples of Category B infectious substances:

- Most cultures and patient specimens shipped to the Public Health Laboratory
- A swab placed in a genprobe bottle (would not meet the IATA definition of a culture)

Table 3.6.D from IATA Dangerous Goods Regulations
Indicative Examples of Infectious Substances Included in Category A in Any Form Unless Otherwise Indicted (January 2020)
[NOTE: "Select Agents or Toxins" are shown in red font]

- *Bacillus anthracis* (cultures only)
- *Brucella abortus* (cultures only)
- *Brucella melitensis* (cultures only)
- *Brucella suis* (cultures only)
- *Burkholderia mallei* - *Pseudomonas mallei* – Glanders (cultures only)
- *Burkholderia pseudomallei* – *Pseudomonas pseudomallei* (cultures only)
- *Chlamydia psittaci* - avian strains (cultures only)
- *Clostridium botulinum* (cultures only)
- *Coccidioides immitis* (cultures only)
- *Coxiella burnetii* (cultures only)
- Crimean-Congo hemorrhagic fever virus
- Dengue virus (cultures only)
- Eastern equine encephalitis virus (cultures only)
- Escherichia coli, verotoxigenic (cultures only)
- Ebola virus
- Flexal virus
- *Francisella tularensis* (cultures only)
- Guanarito virus
- Hantaan virus
- Hantavirus causing hemorrhagic fever with renal syndrome
- Hendra virus
- Hepatitis B virus (cultures only)
- Herpes B virus (cultures only)
- Human immunodeficiency virus (HIV) (cultures only)
- Highly pathogenic avian influenza virus (cultures only)
- Japanese Encephalitis virus (cultures only)
- Junin virus
- Kyasanur Forest disease virus
- Lassa virus
- Machupo virus
- Marburg virus
- Monkeypox virus
- *Mycobacterium tuberculosis* (cultures only)
- Nipah virus
- Omsk hemorrhagic fever virus
- Poliovirus (cultures only)
- Rabies virus (cultures only)
- *Rickettsia prowazekii* (cultures only)
- *Rickettsia rickettsii* (cultures only)
- Rift Valley fever virus (cultures only)
- Russian spring-summer encephalitis virus (cultures only)
- Sabia virus
- *Shigella dysenteriae* type 1 (cultures only)
- Tick-borne encephalitis virus (cultures only)
- Variola virus
- Venezuelan equine encephalitis virus (cultures only)
- West Nile virus (cultures only)
- Yellow fever virus (cultures only)
- *Yersinia pestis* (cultures only)

Examples of Classifying Infectious Substances

Material	Category A	Category B
Culture of *Mycobacterium tuberculosi*s	**X**	
Sputum from a person infected with *Mycobacterium tuberculosi*s		**X**
Known culture of *Salmonella spp.*		**X**
Known culture of *Bacillus anthracis*	**X**	
Suspected culture of *Bacillus anthracis*	Safer Choice	Technically Correct
Tube of blood from a person known to be infected with *Bacillus anthracis*	Safer Choice	Technically Correct
Tube of blood drawn from patient infected with Ebola virus	**X**	
Animal head shipped for rabies testing		**X**

Proper Shipping Names and UN Numbers

Once the proper category is determined, use the corresponding UN number and proper shipping name for your package. Both of these items are required on the outer packaging and are used in later steps. The proper shipping name must be spelled exactly as seen here.

Classification	Proper shipping name	UN number
Infectious substance, Category A	"Infectious substance, affecting humans" (technical name)	UN 2814
Infectious substance, Category B	"Biological substance, Category B"	UN 3373

For category A, notice the parenthesis at the end. In these parentheses, a technical name must be entered. Abbreviations and non-standard formatting are not allowed. So, no italics for scientific names. Examples could include; "Escherichia coli" and "Neisseria meningitidis".

If you are shipping a sample suspected, but not confirmed, to be a category A infectious substance, and have elected to ship the material as a category A as an additional safety measure, the packing name must use the text "Infectious Substance, Affecting Humans (suspected category A infectious substance)."

Packing Selection and Requirements

Package Construction

Not all packages are acceptable for shipping infectious substances. Packages must follow strict DOT and IATA regulations regarding their size, shape, construction materials, and markings. Approved packaging configurations and requirements are defined by the DOT in 49 CFR 172 and 173, and by IATA in the dangerous goods regulations, section 5, packaging instructions 620 and 650.

Package Performance Testing

Additionally, packages must follow strict manufacturing standards and performance. Performance tests simulate the potential conditions the package may encounter during transit and test the package's ability to contain the hazardous material while enduring stresses like drops, leaks, pressurized atmospheres, and stacking loads. Standards for specific performance tests are located in 49 CFR 178 for the DOT and in the Dangerous Goods Regulations, Section 6 for IATA. Performance tests must be documented and the records must be made available to inspectors upon request.

Packaging Options

Performance packaging accepted by the DHEC contracted courier system, also known as a shipper, falls into three general categories: UN certified shippers, PHL approved shippers, and sender verified packaging. Do not mix and match parts of packages. The package has been certified as a unit. Mixing and matching parts invalidates the UN certification.

1. **UN certified shippers** have been tested by the manufacturer and certified to meet all performance requirements for IATA and DOT. This certification mark (seen right) indicates that the package is UN certified.

   UN certified shippers are not certified for all hazardous materials. After the UN mark will be a series of letters and numbers. As an example, 4G / CLASS 6.2 / 20 USA /. Pay special attention to the second set of information. In this example "CLASS 6.2." Class 6.2 is the class which contains infectious substances. A box said "3" or "8" in this location, the box would not be appropriate for shipping infectious substances.

   A UN certified shipper is certified for both Category A and B infectious substances. UN certified shippers, also meet all of the requirements for air transportation, and are universally accepted by national commercial carriers like FedEx or UPS.

   INFECON 5000 or 5500

   - UN Certified for Category A or B
   - Acceptable for aircraft
   - Insulated shipper – use for samples needing cold packs or dry ice
   - Could be used for samples shipped at room temperature

INFECON 2000 or 3000

- UN Certified for Category A or B
- Acceptable for aircraft
- Only use for samples shipped at room temperature

2. **PHL approved shippers**, indicated by the mark to the right, are shippers provided by the PHL, for which the PHL has conducted performance testing. However, the Public Health Laboratory has only conducted the testing needed for ground transportation of Category B infectious substances. Do not use them for Category A shipments and do not offer this package to a national commercial carrier like FedEx or UPS as it has not met all the requirements for air transportation.

ThermoSafe or Uline Shippers

- Laboratory "Approved"
- Category B only
- Not acceptable for FedEx or UPS (pressure tested for aircraft)
- Insulated shipper – use for samples needing cold packs or dry ice
- Could be used for samples shipped at room temperature

3. **Sender Verified Packaging** may be used if the shipper meets all DOT / IATA regulations and/or has been performance tested by your entity or by the manufacturer. If this option is selected, your entity will be responsible for providing USDOT inspectors with performance test results and/or a statement from the manufacturer.

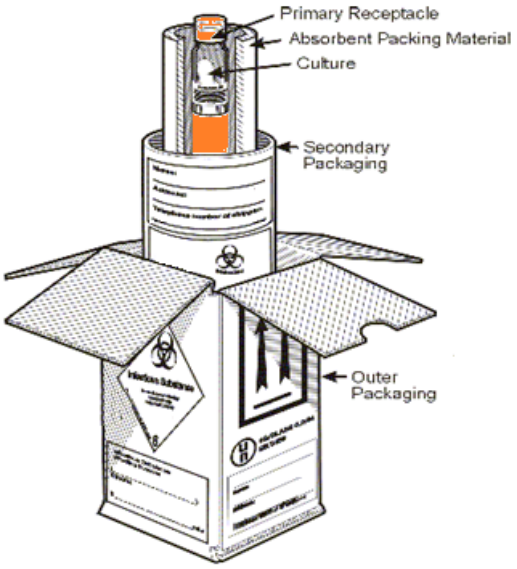
Triple Packaging

The safe transport of infectious substances is based on "triple-packing." As an example, a primary sample container, in a secondary container, in an outer shipper, offering three layers of protection.

Primary Receptacle

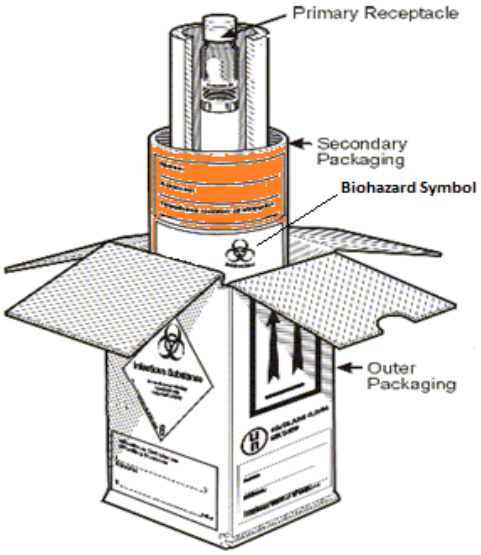
- Is the container (e.g., tube vial, bottle) that holds the specimen.
- Must be securely sealed and leak proof (screw top tubes must have a piece of waterproof tape around the top to prevent the top from coming loose in transit).
- Must be surrounded by absorbent material capable of taking up the entire liquid contents.

  NOTE: Remember, there must always be adequate absorbent materials next to the primary receptacle to contain all liquid contents should the container leak. The PHL provided absorbent pads are rated to absorb 50ml.
- Must be packed in the secondary receptacle in such a way that it will not break.



Secondary Packaging

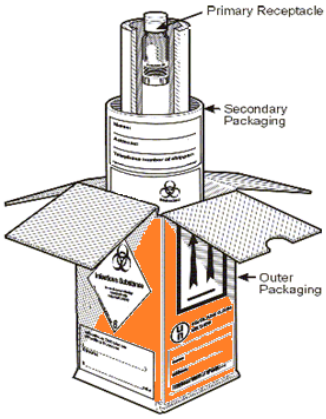
- Is the receptacle into which a primary receptacle and the absorbent and cushioning material are placed.
- Must be leak proof and securely sealed.
- Must be placed in the outer packaging so that it does not move.
- Must have a biohazard symbol.
- <u>Never put dry ice inside a secondary container.</u> The container may rupture because of trapped gasses.
- <u>Never put paperwork inside the secondary container</u>.



Note: For PHL approved containers, a ziplock biohazard bag may serve as the <u>secondary receptacle</u> for a patient specimen if transport is by ground with the DHEC courier system.

Outer Packaging

- Is the receptacle into which the secondary receptacle, along with cushioning materials, is placed.
- Must be rigid.
- Bears all required markings and labels.
- At least one surface of the outer packaging must have a minimum dimension of 4 inches x 4 inches.
- Itemized list of contents, requisition forms, and other paperwork is placed here next to the secondary container.
- Dry ice and cool pack are placed here next to the secondary container.



- Seal the package with clear shipping tape. Do NOT use excessive tape to close the outside container.
- Use caution when opening outer packages. Cut the tape instead of pulling the tape to open the package. Pulling the tape can rip or tear reusable package. Also be careful not to cut the box, specifically cardboard closing tabs.

Over Packaging

- Is not required for all packages.
- Is a larger box containing one or more smaller completely packaged and labeled shippers.
- Must bear all the same marks and labels required by the contents of the shippers it contains.
- Must bear label with the word "Over pack."
- Over packs may be needed if more, surface area is needed on a shipper to accommodate the required marks and labels.

Closure Instructions

When using a UN certified or PHL approved shipper, you must follow the manufacturer's instructions for closing the package. If the closure instructions specify an order to close the flaps of the box, that order must be followed. Failure to follow the manufacture's closure instructions can result in a DOT fine. It is important to retain a copy of these instructions both for reference as needed and if requested by a DOT inspector.

Quantity Limits

For Category B infectious substances, regulations allow:

- Up to 1 liter per primary receptacle
- Up to 4 liters per outer packaging.

For Category A infectious substances, regulations allow:

- Up to 50ml or 50g per shipper on a passenger aircraft.
- Up to 4 liters per shipper on a cargo aircraft.

Shipping with Cold Packs or Dry Ice

Check the test section in the *Public Health Laboratory Services Guide*, if unsure of temperature requirements for the infectious substance being shipped.

- If the specimen must be shipped cold, but not frozen, use cold packs around the **outside** of the secondary packaging in an insulated shipper. Do not use ice because it will melt and leak during shipping.

- If the specimen must be shipped frozen, place dry ice around the **outside** of the secondary packaging in an insulated shipper. Never place dry ice inside the secondary container. The same properties that make it leak-proof also make it gas-tight. The container can explode as pressure builds. Additional labeling is required for dry ice. A good rule of thumb is to add at least 6 pounds per 24-hour period.

Shipping Paperwork

The following papers must accompany each package containing infectious substances:

- Itemized list of contents
- Paperwork related to sample testing (requisition forms, results, etc.)
- Declaration of Dangerous Goods (for shipments of Category A or dry ice)

Itemized list of Contents

All packages must be accompanied by an itemized list of contents. This document contains:

- To and From Address
- An Emergency Contact Name and Telephone
- The kind of specimens with a brief description
- The number and total volume of the samples
- The proper shipping classification for the hazards

Itemized List Used by the Public Health Laboratory

Shipped from: SC DHEC Public Health Laboratory
8231 Parklane Road
Columbia, SC 29223
Emergency Contacts: Andrea Causey
Emergency Telephone: (803) 767-8110

Shipped to: _____

_____

_____

Shipping Temperature
_____ ambient
_____ cold packs
_____ dry ice

Next day delivery required
____No
____Yes

Specimen or Culture Examples – culture slant of Salmonella	**Number of tubes or plates**	**Volume in each tube or plate**	**Total volume**	**Proper shipping classification (circle only one)**
				Infectious substance, category A **or** Infectious substance, category B

Shippers Declaration for Dangerous Goods


SHIPPER'S DECLARATION FOR DANGEROUS GOODS

(Provide at least three copies to the airline.)

Shipper

Air Waybill No.

Page of Pages

Shipper's Reference Number

Consignee

This shipper's declaration was prepared using a FedEx Express template. It must be used ONLY for:
* Class 7 radioactive shipments
* Shipments using an IATA or export (IPI, EXT or ATA service)
* Shipments originating from a non-US location

Two completed and signed copies of this declaration must be handed to the operator.

WARNING

Failure to comply with all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.

TRANSPORT DETAILS

This shipment is within the limitations prescribed for (delete non-applicable):

PASSENGER AND CARGO AIRCRAFT | CARGO AIRCRAFT ONLY

Airport of Departure

Airport of Destination

Shipment type: (delete non-applicable)

NON-RADIOACTIVE | RADIOACTIVE

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Identification						
UN or ID No.	Proper Shipping Name	Class or Division (Subsidiary Risk)	Packing Group	Quantity and type of packaging	Packing Inst.	Authorization

Additional Handling Information

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and National Governmental Regulations. I declare that all of the applicable air transport requirements have been met.

Name/Title of Signatory

Place and Date

Signature (See warning above)

Company Telephone Number

- Required for packages containing a Category A infectious substance and/or dry ice.
- This is a legal document that declares to the courier the hazardous contents in the package.
- A pdf fillable version of this document is available at www.iata.org/whatwedo/cargo/dgr/Documents/Shippers-Declaration-Open-Format-Fillable.pdf
- Small amounts (≤ 30ml) of sample preservative which are classified as Class 3 (flammable) and/or Class 8 (corrosive) materials are not required to be listed on the declaration.
- Use the proper shipping name and UN number as determined in previous steps.
- The document must be attached to the outside (usually the top) of the package in a document pouch. The entire pouch must fit flat on one side of the package.
- The document must be completed in **triplicate**, each as an original, with the red stripe down each side of the paper. Two copies are given to the transporter and one copy is kept for your files.
- These documents must be kept by the sender for a minimum of two years from the date of the shipment.

NOTE - Federal Express does not accept hand written Shipper's Declarations. Refer to www.fedex.com/us for details regarding acceptable electronic methods to prepare this form.

Marks and Labels

The following marks and labels must be present, complete, and unobstructed for proper shipping. Any marks or labels which are defaced, altered, or covered up in any way are invalid.

Secondary Packaging

- Address of the sender
  (with emergency contact information)

From:
DHEC County Health Department
123 Wellness Drive
Health Springs, SC XXXXX
Emergency Contact: Al Ready 803-123-4567

- Biohazard Symbol
  (not required if the symbols is present on the secondary container)

Outside Packaging

- Address of the sender
  (with emergency contact information)

From:
DHEC County Health Department
123 Wellness Drive
Health Springs, SC XXXXX
Emergency Contact: Al Ready 803-123-4567

- Address of the intended recipient
  a. Mark the intended laboratory

Ship To:
SC DHEC Public Health Laboratory
___ Clinical Microbiology ___ TB
___ Special Pathogens ___ Virology
8231 Parklane Road
Columbia, SC 29223

- Class 6.2 Hazard Diamond

Category B

or

Category A

- UN number and proper shipping name(s)
  - Must be within 6 inches of the 6.2 hazard diamond and on the same side of the box

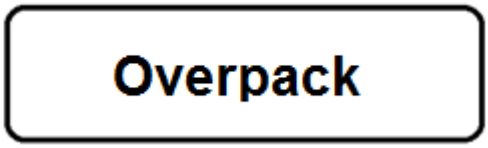
Category A	"UN 2814 Infectious Substance, Affecting Humans" (technical name)
Category B	"UN 3373 Biological Substance, Category B"
Dry Ice	"UN 1845 Dry Ice"

Outside Packaging (Situational)

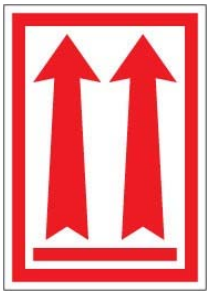
- If Dry Ice was used,
  - A class 9 hazard diamond
  - Must be within 6 inches of the 6.2 hazard diamond and on the same side of the box
  - Mark the weight of dry ice, in kilograms. One pound = 2.2 kg

and

- "Overpack"
  (if an overpack was used)



- Orientation Arrows
  (if the specimen is liquid)



Emergency Contact Information

- The outside packaging and the secondary container must be marked with an emergency contact name and telephone number for a point of contact of the sender.
- This person must be knowledgeable about the contents of the shipment and be able to provide guidance to first responders who call in case of a spill.
- This number must be immediately answered by the knowledgeable person. An answering service or voicemail is not acceptable.
- An outside contractor that provides this type of service may be used if you have an agreement in place.

Special Situations

Newborn Screening Blood Spots

1. Allow blood spots to **AIR DRY** thoroughly on a level non-absorbent surface such as a plastic coated test tube rack at least 4 hours at room temperature.

2. Place **dried** filter paper form(s) into the provided mailing envelope. Mail the specimen within 24 hours. No additional labeling is required on the outside of the envelope. The dried blood spots cannot

leak or spill and are exempt from the dangerous goods/hazardous materials shipping regulations. **The envelopes provided to ship dried blood spots should not be used to ship any other type of patient specimen.**

3. Overnight shipping is recommended. The Public Health Lab (PHL) has a FedEx account to cover the cost of shipping newborn screening specimens to the PHL. To enroll to use this FedEx account, contact PHL at 803-896-0795.

Suspected Bioterrorism Specimens and Cultures

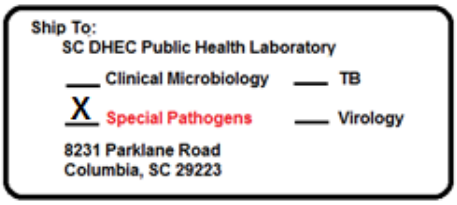
Prior notification is requested for specimens and/or cultures being sent for "rule out/rule in" testing for bioterrorism agents. Please notify: The Special Pathogens Supervisor, **Amanda Moore, 803-896-0777** before shipping these specimens or cultures**.** Alternate: Megan Davis, 803-896-0870

Use only UN certified packaging. UN certified shippers specific to the special pathogens program are available upon request. See the section on Requesting Shipping Supplies.

Classification of the infectious substance is the shipper's responsibility and should be based on the available information. We encourage shipping suspected bioterrorism samples as Category A infectious substances as an additional precaution.

If you are shipping a sample suspected, but not confirmed, to be a category A infectious substance, and have elected to ship the material as a category A as an additional safety measure, the packing name must use the text "Infectious Substance, Affecting Humans (suspected category A infectious substance)."

To ensure that the sample is routed to the correct laboratory. Please verify that the Special Pathogens Laboratory has been marked on the "To" shipping label.



[NOTE] Special Pathogens pre-labeled shippers may be obtained by calling 803-896-0777 / 803-896-0773 (limit 2 per laboratory).

Public Health Laboratory Shipping Address

Public Health Laboratory
8231 Parklane Road
Columbia, SC 29223

Business hours are 8:00 AM to 4:00 PM
Monday through Friday, except
for state holidays

Public Health Laboratory Contact Information

24/7 telephone number: 803-896-0800

Safety Office: 803-896-0956

Requesting Shipping Supplies: Email: PHL-Supply@dhec.sc.gov

Requesting Shipping and Specimen Collection Supplies

Shipping supplies are available without charge to support DHEC programs.
Supplies include:

- Shippers
- Mark and Label Stickers (hazard diamonds, UN numbers, etc.)
- Biohazard bags
- Absorbent materials
- Requisition forms

To request materials, please contact by email at PHL-Supply@dhec.sc.gov.

References for Information in This Document:

IATA *Dangerous Goods Regulations*, 61st edition, effective January 1, 2020 to December 31, 2020

Code of Federal Regulations, 49 CFR Parts 171-180, (US Department of Transportation's Hazardous Materials Regulations)

United States Postal Service, *Domestic Mail Manual*

Code of Federal Regulations, 42 CFR Part 73, (Select Agent Regulations)

Centers for Disease Control and Prevention, *Guidelines for the Shipment of Dried Blood Spot Specimen*

SECTION V

TEST FEE POLICY

The Public Health Laboratory is only partially supported by legislative appropriations from State Funds. Therefore, we have been authorized to charge fees under certain conditions.

TEST FEES:
A fee is charged for those tests which benefit only the individual patient or which are readily available from private sources.

Exempt from charges:

A. Test (s) that is not reasonably available from qualified private laboratories.
B. Test (s) whose result is primarily of epidemiologic or public health significance.
C. Test (s) run as a matter of lab policy which is not requested by the physician.
D. When the patient is medically indigent. In this case, the physician will be billed, but may deduct the charges before remitting. See billing procedures.
E. Repeat tests for Newborn Screening. If the repeat test was requested by the Public Health Laboratory, i.e., initial test was invalid due to early dismissal, or improperly collected specimen or insufficient quantity or other reason, there is no charge for the repeat test. ***All initial and second tests are subject to the full fee.***

BILLING PROCEDURE

Clients/Customers will be billed monthly by an itemized invoice that includes the patient's name, medical record number, specimen number, date mailed, test(s) performed, and the test fees for each specimen. Billing invoices are generated by Sender and/or Billing numbers. Please note that the Public Health Laboratory **does not** bill Medicaid or any private insurance companies.

Payments:

1. Do not send payment with the specimen. Pay only when you receive a billing invoice.
   Note: Please do not send cash payments.

2. The billing invoice will consist of two copies: The remittance copy must be returned with your payment for proper crediting of your account. Please retain the provider copy for your records. On the left side of the billing invoice there is a column headed "Eligible for NON payment." Please place an "X" in this column beside the name of any patient listed who is considered to be unable to pay for the test, i.e. indigent. Place the total charges for patients eligible for non-payment in the indicated space at the upper right-hand corner of the billing invoice and deduct this amount from the total charges. Please indicate the amount remitted on the line designated on the billing invoice. Please make check payable to South Carolina Department of Health and Environmental Control (SCDHEC) and remit to the Attention of: Bureau of Financial Management, PO Box 100103, Columbia, South Carolina 29202-3103. If you have any questions pertaining to your account, please notify the Public Health Laboratory immediately at (803) 896-0800.

3. Payment can be accessed on DHEC website at http://www.scdhec.gov. Click on "For Business" then click on "Pay Invoices". **Note: Total payment amount online for debit/credit card payment is limited $3,000.00 with a $1.00 transaction fee. Total payment amount greater than $3,000.00 can be paid online by electronic check.**

PUBLIC HEALTH LABORATORY SERVICES GUIDE INDEX

VII. Diagnostic Serology Quick Reference Guide

Diagnostic Serology Quick Reference Guide

Test	HIV-1 Quant. RNA	Hepatitis C RNA	HIV-1/ HIV-2 HIV-1/HIV-2 antibody, HIV-1, HIV-2 antibodies, HIV-1 antigen	Syphilis
Container	PLASMA PREPARATION TUBE	SERUM SEPARATOR TUBE	SERUM SEPARATOR TUBE or RED TOP TUBE if received by the laboratory within 24 hours	SERUM SEPARATOR TUBE or RED TOP TUBE if received by the laboratory within 24 hours.
Specimen & Volume	2 mL of **plasma**	2 mL of serum; use serum separator tube and collect a full 6 mL of blood.	1 mL of serum	1 mL of serum
Special Instructions	Invert gently 5X, allow to clot for 30 minutes and centrifuge. **The sample MUST BE kept refrigerated at all times following centrifugation. Label outside of box as "HIV (VIRAL LOAD)". Make sure label will not come off.**	Invert gently 5X, allow to clot for 30 minutes and centrifuge. **The sample MUST BE kept refrigerated at all times following centrifugation. Label outside of box as "HCV Viral Load" with indelible marker or sticker that cannot easily be removed.**	Invert SST 5X gently, allow to clot for 30 min. & centrifuge within 2 hours (preferred 2 hours may extend up to 6 if needed) according to manufacturer's guidelines.	Invert SST 5X gently, allow to clot for 30 min. & centrifuge within 2 hours (preferred 2 hours may extend up to 6 if needed) according to manufacturer's guidelines.
Storage & Temperature	**Store refrigerated (2° - 8°C) and ship on an ice pack. Prefer to receive within 24 hours. Must be received within 3 days of collection and be refrigerated following centrifugation. Please send ASAP and notate storage conditions.**	**Store refrigerated (2° - 8°C) and ship on an ice pack. Prefer to receive within 24 hours. Must be received within 5 days of collection and be refrigerated following centrifugation. Please send ASAP and notate storage conditions.**	**Room Temp:** 24 hours Red Top; 1-2 days SST **(must arrive at the laboratory within 2 days of collection.)** **2°C to 8°C:** SST: 3-7 Days **(must be refrigerated and shipped with an ice pack)**	**Room Temp:** SST & Red Top: 24 hours **(must arrive at the laboratory within 24 hours of collection.)** **2°C to 8°C:** SST: 2-5 Days **(must be refrigerated and shipped with an ice pack and arrive within 5 days of collection)**

*Samples must arrive within the time frame for each storage requirement. Example, Hep. A must arrive to the lab within 3 days if the sample was stored at room temp. It must arrive within 7 days if it was kept refrigerated and sent on an ice pack. Viral loads must be kept refrigerated after centrifugation is completed and shipped on an ice pack. It is ideal that viral loads arrive to the lab within 24 hours. Page 1 of 4

Diagnostic Serology Quick Reference Guide

Test	Hepatitis A (IgG & IgM) Antibody to Hepatitis A Virus, IgG; Hepatitis A Virus, IgM	Hepatitis C Antibody (HCV) Antibody to Hepatitis C Virus; Anti-HCV	Gonorrhea/ Chlamydia/ TRICH
Container	SERUM SEPARATOR TUBE or RED TOP TUBE if received by the laboratory within 24 hours.	SERUM SEPARATOR TUBE or RED TOP TUBE if received by the laboratory within 24 hours.	ONLY USE GEN-PROBE APTIMA SPECIMEN COLLECTION KITS. PATIENTS UNDER 12 SHOULD BE TESTED BY CULTURE. **Swab specimen:** For endocervical, rectal and pharyngeal, and/or male urethral specimens, the Gen-Probe blue-shafted swab in the Gen-Probe Aptima Unisex Swab Specimen Collection Kit for Endocervical and Male Urethral Swab Specimens (Blue Label) should be used. **Vaginal specimens:** Use the Gen-Probe Aptima Vaginal Swab Specimen Collection kit (Orange label) for collecting vaginal samples. **Urine specimen:** Patient should not have voided within one hour of collection. Collect first 20-30 ml of the first-catch urine stream into collection cup. Transfer 2 ml of urine into Aptima Urine Specimen Transport tube so that the urine level falls within the two lines on the transport tube labeled: "fill area". (Yellow Label).
Specimen & Volume	0.50 mL of serum	0.25 mL/ 2.25 mL if reactive	
Special Instructions	**All Hepatitis A outbreak investigations should be reported to the laboratory supervisor (803-896-0811) or Division Director (803-896-0870) prior to shipment of specimens.**	Invert SST 5X gently, allow to clot for 30 min. & centrifuge within 2 hours (preferred 2 hours may extend up to 6 if needed) according to manufacturer's guidelines.	**TRICH SAMPLES: The only source/sample type that can be collected are urine, cervical, and vaginal.**
Storage and Temperature	**EXCLUDING HBsAG** **Room Temp:** 24 hours Red Top; 1-3 days SST **2°C to 8°C:** SST 3-7 Days (must be refrigerated and shipped with an ice pack)	**Room Temp:** 24 hours Red Top; 1-3 days SST (unless a Viral Load is requested. It is better to follow HCV Viral load sample requirements in case the sample is reactive). **2° - 8°C:** SST 3-7 days (must be refrigerated and shipped with an ice pack)	Store and ship at room temperature or with ice packs. Swab specimens must be tested within 60 days of collection. Urine specimens within 30 days of collection.

*Samples must arrive within the time frame for each storage requirement. Example, Hep. A must arrive to the lab within 3 days if the sample was stored at room temp. It must arrive within 7 days if it was kept refrigerated and sent on an ice pack. Viral loads must be kept refrigerated after centrifugation is completed and shipped on an ice pack. It is ideal that viral loads arrive to the lab within 24 hours. Page 2 of 4

Diagnostic Serology Quick Reference Guide

Test	Hepatitis B Diagnostic Profile HBsAg, anti-HBs, and anti-HBc, and anti-core IgM if indicated	Hepatitis B Surface Antigen (HBsAG) Hepatitis-Associated Antigen	Hepatitis B Core IgM Antibody Anti-HBc, IgM; HBcAb, IgM; Antibody to Hepatitis B Core Antigen, IgM	Hepatitis B Anti-Core Anti-HBc; Core Antibody; HBcAb, Total; Antibody to Hepatitis B Core Antigen	Hepatitis B Surface Antibody HBsAb; Anti-HBs; Antibody to Hepatitis B Surface Antigen	Hepatitis B Immune Status/Post-Immunization Anti-HBs and Anti-HBc
Container	SERUM SEPARATOR TUBE or RED TOP TUBE if received by the laboratory within 24 hours.	SERUM SEPARATOR TUBE or RED TOP TUBE if received by the laboratory within 24 hours.	SERUM SEPARATOR TUBE or RED TOP TUBE if received by the laboratory within 24 hours.	SERUM SEPARATOR TUBE or RED TOP TUBE if received by the laboratory within 24 hours.	SERUM SEPARATOR TUBE or RED TOP TUBE if received by the laboratory within 24 hours.	SERUM SEPARATOR TUBE or RED TOP TUBE if received by the laboratory within 24 hours.
Specimen & Volume	2 mL of serum	1 mL of serum	0.25 mL of serum	0.5 mL of serum	1 mL of serum	1 mL of serum
Special Instructions	Invert SST 5X gently, allow to clot for 30 min. & centrifuge within 2 hours (preferred 2 hours may extend up to 6 if needed) according to manufacturer's guidelines.	Invert SST 5X gently, allow to clot for 30 min. & centrifuge within 2 hours (preferred 2 hours may extend up to 6 if needed) according to manufacturer's guidelines.	***Test automatically performed on patients with reactive anti-HBc total antibody in absence of reactive HBsAg or anti-HBs on Diagnostic Profile (test #223) and test automatically performed on patients with reactive Hepatitis B surface antigen on Diagnostic Test Panel #223***	Invert SST 5X gently, allow to clot for 30 min. & centrifuge within 2 hours (preferred 2 hours may extend up to 6 if needed) according to manufacturer's guidelines.	**Tests includes Anti-HBs and Anti-HBc** Invert SST 5X gently, allow to clot for 30 min. & centrifuge within 2 hours (preferred 2 hours may extend up to 6 if needed) according to manufacturer's guidelines.	Invert SST 5X gently, allow to clot for 30 min. & centrifuge within 2 hours (preferred 2 hours may extend up to 6 if needed) according to manufacturer's guidelines.
Storage and Temperature	**Store refrigerated (2° - 8°C) and ship on ice. Red Top must arrive within 24 hours. SST must be received within 6 days of collection.**	**Store refrigerated (2° - 8°C) and ship on ice. Red Top must arrive within 24 hours. SST must be received within 6 days of collection.**	**EXCLUDING HBsAG** **Room Temp:** 24 hours Red Top; 1-3 days SST **2°C to 8°C:** SST: 3-7 Days (must be refrigerated and shipped with an ice pack)	**EXCLUDING HBsAG** **Room Temp:** 24 hours Red Top; 1-3 days SST **2°C to 8°C:** SST: 3-7 Days (must be refrigerated and shipped with an ice pack)	**EXCLUDING HBsAG** **Room Temp:** 24 hours Red Top; 1-3 days SST **2°C to 8°C:** SST: 3-7 Days (must be refrigerated and shipped with an ice pack)	**Room Temp:** 24 hours Red Top; 1-3 days SST **2°C to 8°C:** SST: 3-7 Days (must be refrigerated and shipped with an ice pack)

*Samples must arrive within the time frame for each storage requirement. Example, Hep. A must arrive to the lab within 3 days if the sample was stored at room temp. It must arrive within 7 days if it was kept refrigerated and sent on an ice pack. Viral loads must be kept refrigerated after centrifugation is completed and shipped on an ice pack. It is ideal that viral loads arrive to the lab within 24 hours. Page 3 of 4

Blood Tube	Plasma Preparation Tubes (PPT)	Serum Separator Tubes (SST)	Red Top Tube
Test(s)	**HIV-1 Quant. RNA (can only be collected with PPT)**	• Hepatitis A, IgG/IgM • Hepatitis B Anti-core, Core IgM, Diagnostic Profile, Immune Status/ Post Imm, Surface Antibody & Surface Antigen • Hepatitis C Antibody • **Hepatitis C RNA (can only be collected with SST)** • HIV-1/HIV-2 • RPR • Geenius • TP-PA	May be used if the sample will arrive at the laboratory within 24 hours after collection • Hepatitis A, IgG/IgM • Hepatitis B Anti-core, Core IgM, Diagnostic Profile, Immune Status/ Post Imm, Surface Antibody & Surface Antigen • Hepatitis C Antibody • HIV-1/HIV-2 • RPR • Geenius • TP-PA
Pictures of Collection Tubes	 PPT	 Red and Gold Top  Red and Gray Top  Gold Top	 Red Top Tube

*Samples must arrive within the time frame for each storage requirement. Example, Hep. A must arrive to the lab within 3 days if the sample was stored at room temp. It must arrive within 7 days if it was kept refrigerated and sent on an ice pack. Viral loads must be kept refrigerated after centrifugation is completed and shipped on an ice pack. It is ideal that viral loads arrive to the lab within 24 hours. Page 4 of 4

VIII. Guidance from the APHL Reverse Syphilis Serologic Testing Algorithm

Test Outcomes	Test Sequence			Interpretation for Laboratory Report	Further Actions
	Step 1	**Step 2**	**Step 3**		
	Treponemal Assay (TP)	**Non-Treponemal Assay (RPR)**	**Treponemal Assay (TP-PA)**		
	Non-reactive	Not indicated	Not indicated	No laboratory evidence of syphilis infection	No treatment indicated at this time. If recent exposure is suspected, repeat test in 2-4 weeks if client was not treated presumptively
	Reactive	1. Non-reactive	Non-reactive	Treponemal antibodies not confirmed. Inconclusive for syphilis infection; potentially early infection or false positive TP*	No treatment indicated at this time. Perform clinical evaluation to identify signs, symptoms, or history of infection. If recent exposure is suspected, repeat test in 2-4 weeks if client was not treated presumptively
	Reactive	Non-reactive	Reactive	Treponemal antibodies detected. Consistent with past or potential early syphilis infection	If client reports previous syphilis treatment, no treatment indicated at this time. Repeat test in 2-4 weeks if recent exposure is suspected and client was not treated presumptively. If client reports no previous treatment, treat for latent syphilis infection according to staging assessment
	Reactive	Reactive ≥ 1:1	Not indicated	Treponemal and non-treponemal antibodies detected. Consistent with current or past syphilis infection	Perform a clinical evaluation to identify syphilis stage and treat according to syphilis staging

*Health conditions that may cause false-positive treponemal results include advancing age, cirrhosis, drug addiction, genital herpes, hyperglobulinemia, pregnancy, spirochetal infection other than syphilis, systemic lupus erythematosus, and thyroiditis