TEXAS
Department of State Health Services

Laboratory Services Section

Manual of Reference Services

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TEXAS
Department of State Health Services

Welcome!

Dear Texas Department of State Health Services Laboratory Customer:

We are pleased to provide you the most recent version of the Manual of Reference Services. Please use this manual as a reference guide.

We have designed the manual to give you the latest information on tests performed by the Laboratory Services Section. It also provides a brief overview of the Laboratory, telephone numbers, and procedures for the submission, collection, and handling of specimens. Also, we have included a list of forms for submitting specimens.

If we can be of any assistance to you, please contact the Laboratory Services Section at (512) 458-7318 or FAX (512) 458-7294. Thank you for your continued support.

Sincerely,

Susan U. Neill, Ph.D., MBA
Director,
Laboratory Services Section

Telephone Numbers and Administrative Contact Info

Rabies Notification: 1-800-252-8163

Lab Reporting for:	Telephone	Fax
Environmental Texas Health Steps (EPSDT), Microbiology, Newborn Screening	(512) 458-7587 (512) 458-7578	(512) 458-7757 (512) 458-7533
Specimen/Sample Acquisition:	(512) 458-7598	(512) 458-7510
Lab Accounting:	(512) 458-7317	(512) 458-7588
Administrative Staff		
Susan Neill, Ph.D, M.B.A. Director, Laboratory Services Section	(512) 458-7318 FAX (512) 458-7294 susan.neill@dshs.state.tx.us	
Eldridge Hutcheson, Ph.D. Director, Laboratory Operations Unit	(512) 458-7415 FAX (512) 458-7406 eldridge.hutcheson@dshs.state.tx.us	
Sherry Clay, M.A. Director, Quality Assurance Unit	(512) 458-7318 FAX (512) 458-7294 sherry.clay@dshs.state.tx.us	
Larry Seigler, Ph.D. Director, Health Facilities Unit	(512) 458-7318, ext. 2552 FAX (512) 458-7157 larry.seigler@dshs.state.tx.us	
Dwight Schaeper, Ph.D. Manager, Environmental Sciences Branch	(512) 458-7587 FAX (512) 458-7757 dwight.schaeper@dshs.state.tx.us	
Elizabeth Delamater, Ph.D. Manager, Microbiological Sciences Branch	(512) 458-7592 FAX (512) 458-7452 elizabeth.delamater@dshs.state.tx.us	
Lisa Chappell Manager, Specimen Aquisition Branch	(512) 458-7598 FAX (512) 458-7510 lisa.chappell@dshs.state.tx.us	
Susan Tanksley, Ph.D. Manager, Biochemistry & Genetics Branch	(512) 458-7430 FAX (512) 458-7221 susan.tanksley@dshs.state.tx.us	
Rosanne Gifford Women's Health Laboratory (Branch)	(210) 534-8857 FAX (210) 531-4506 rosanne.gifford@dshs.state.tx.us	
Aurora Martinez South Texas Laboratory (Branch)	(956) 364-8748 FAX (956) 412-8794 aurora.martinez@dshs.state.tx.us	

Local Health Department Labs

Local Health Dept.	Director or Administrator	Lab Director	Main Telephone	Lab Telephone	Fax
Abilene-Taylor CO Public Health Dist 850 N 6th Abilene, Texas 79601	Larry Johnson	Nancy Jennings	(325) 692-5600		(325) 734-5370
Austin Dept of HHS 15 Waller St Austin, Texas 78702	Johnny Clarke	L. Bruce Elliott	(512) 972-5421		(512) 972-5451
Brazos County Health Dept 201 North Texas Ave Bryan, Texas 77803-5317	Ken E. Bost	Bill Rosser	(979) 361-4440 ext. 244	(979) 361-4440 ext. 244	(979) 823-2275
Corpus Christi-Nueces CO PH Dist 1702 Horne Road Corpus Christi, Texas 78416	Anette Rodriquez (Acting)	Sandra Heatherley	(361) 826-7200	(361) 826-7213	(361) 826-7217
Dallas CO Dept Health & Human Svcs 2377 N Stemmons Freeway Dallas, Texas 75207	Zac Thompson	Edward R. Bannister, Ph.D.	(214) 819-1952	(214) 819-1950	(214) 819-2896
City of El Paso-Dept. of Public Health 4505 Alverta, 2nd floor El Paso, Texas 79905	Michael Hill		(915) 771-5701	(915) 543-9984	(915) 546-9034

Local Health Dept.	Director or Administrator	Lab Director	Main Telephone	Lab Telephone	Fax
Greenville-Hunt CO Health Dept 2700 Johnson St Greenville, Texas 75401	Grady M. McMahan, D.O., RPh.	Joe Lilly	(903) 408-4140	(903) 408-4142	(903) 454-3721
Houston Dept of HHS 1115 South Braeswood Houston, Texas 77030	Stephen Williams	Sudha Pottumarthy, PhD (Acting)	(713) 794-9311	(713) 558-3400	(713) 794-9680
La Marque-Galveston CO Health Dist 1207 Oak Street La Marque, Texas 77568-5925		Doug Simburger	(409) 938-7221	(409) 938-2449	(409) 938-2271
City of Laredo Health Dept 2600 Cedar Avenue Laredo, Texas 78040	Hector F. Gonzalez, M.D., M.P.H.	Ricardo Martinez	(956) 795-4900	(956) 795-4908	(956) 795-2034
Lubbock City Health Dept 1902 Texas Avenue Lubbock, Texas 79411	Tommy Camden	Kim Swacina	(806) 775-2906	(806) 775-2908	(806) 775-3178
Midland Health Dept 3303 W Illinois, Space 22 Midland, Texas 79703	H. Humphreys, M.D.	Cecilia Zubia Celestino Garcia, RS	(432) 681-7613	(432) 681-7618	(432) 681-7634
Paris-Lamar CO Health Dept 740 South West 6th St Paris, Texas 75460	Anthony Bethel		(903) 785-4561		(903) 737-9924

Local Health Dept.	Director or Administrator	Lab Director	Main Telephone	Lab Telephone	Fax
Port Arthur City Health Dept 449 Austin Avenue Port Arthur, Texas 77640	Yoshi Alexander, MBA	Lloyd Haggard (Consultant)	(409) 983-8800	(409) 983-8835	(409) 983-8889
San Antonio Metropolitan Hlth Dist 332 W Commerce, Ste 201 San Antonio, Texas 78205-2489	Fernando Guerra, M.D., M.P.H.	Melanie Rech	(210) 207-8747	(210) 207-8820	(210) 207-2159
South Texas Laboratory 1301 S. Rangerville Road Harlingen, Texas 78552	Susan U. Neill, Ph.D., MBA	Aurora Martinez	(956) 364-8748	(956) 364-8746	(956) 412-8794
Sweetwater-Nolan CO Health Dept 301 East 12th Street Sweetwater, Texas 79556	Don Ware, RS	Don Ware, RS	(325) 235-5463		(325) 236-6856
Tarrant CO Public Health Dept 1101 S Main St., Ste. 1700 Fort Worth, Texas 76104	Lou Brewer	Gary C. Dixon, Ph.D.	(817) 321-5300	(817) 321-4757	(817) 321-4790
Tyler-Northeast TX Public Health Dist 815 North Broadway Rear Tyler, Texas 75702	D.E. Sciarrini, FAAMA	Kim Keys	(903) 535-0030	(903) 535-0090	(903) 535-0095

Local Health Dept.	Director or Administrator	Lab Director	Main Telephone	Lab Telephone	Fax
Tyler-Public Health Lab of East TX 11937 US Hwy 271, Bldg 558 Tyler, Texas 75708-3154		Irene Krumins	(903) 877-7960	(903) 877-5071	(903) 877-2819
Victoria CO Health Dept 2805 North Navarro St Victoria, Texas 77901	Bain C. Cate, MD	Jodie Aldis	(361) 578-6281		(361) 578-7046
Waco-McLennan CO PH Dist 225 West Waco Drive Waco, Texas 76707		Laurel Churchman	(254) 750-5486	(254) 750-5458	(254) 750-5480
Wichita Falls-Wichita CO PH Dist 1700 Third Street Wichita Falls, Texas 76301	Lou Franklin, RN, BSN	Jo Harp	(940) 761-7800	(940) 761-7835	(940) 761-7878
Women's Health Lab 2303 S E Military Dr. Ste 1 San Antonio, Texas 78223	Susan U. Neill, Ph.D., MBA	Rosanne Gifford (Manager) Robert Bredt, M.D.	(210) 534-8857 ext. 2357	Dr.Bredt (210) 531-4559	(210) 531-4506

Guidelines for Specimen Collection and Submission

Telephone Inquiries

Telephone inquiries should be directed to (512) 458-7578 for lab results and (512) 458-7598 for inquiries about guidelines for the submission, collection, and handling of specimens.

We examine specimens as carefully and rapidly as possible; however, we do not sacrifice accuracy for speed. Please consider the following information before making a telephone inquiry:

- Lab reporting results are given only to the original submitter.
- Upon receipt of the specimen at the Laboratory, most testing will be completed in one to three days; however, newborn screening tests take three to six days.
- Confirmation of findings in certain bacteriological examinations may necessitate a short delay in reporting results.
- If specimens must go to another reference center, the report will be delayed for at least two weeks.

Of course, emergency matters may be pursued any time.

Reference Services

If reference services are needed that are not provided in this laboratory system, the Laboratory uses the services of the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia or in Ft. Collins, Colorado. When a particular test is available only from CDC, submitters should send the specimen TDSHS requisition form, along with a patient history, to the Texas Department of State Health Services for forwarding to the CDC.

Submission of Specimens

Please exercise care when submitting specimens and requesting tests. Services are offered only in keeping with departmental policies, licensure, and mission; therefore, services may be withdrawn in case of misuse or improper specimen submission. Submission of proper specimens under optimum conditions is very important. Accurate tests seldom can be performed on poor specimens.

The Laboratory enforces the principles of Good Laboratory Practices. The submitter is responsible for ensuring expiration dating on media. We will monitor the interval between the collection and the receipt of time-sensitive specimens (newborn screening, bacteriological water, gonorrhea).

Prenatal Triple Screen Collection and Packing Instructions

General Instructions

1. Submit a G-1C form for each patient with corresponding specimen tube.
2. Retain a copy of the G-1C submission form for your records.
3. Clearly label each specimen with the patient's first and last name as written on the G-1C specimen submission form. Pre-printed patient labels used for specimen identification MUST match the patient's name on the submission form.
4. Specimens must be triple-contained.

Special Requirements
Required Specimen Type: 2 mL of serum in blue top tube specific for Triple Screen Testing.

Special Instructions

1. Specimen must be collected from patients between 15.0 and 20.9 gestational weeks, preferably 16-18 weeks. Serum specimen must be collected prior to amniocentesis.
2. Allow samples to clot completely before centrifugation; remove serum from clot within 2 hours of collection. Immediately transfer serum to special blue top tube provided by DSHS and freeze (-20 degrees C or lower). Batching of specimens for shipment is recommended.
3. Specimens MUST be kept frozen until shipping is initiated. Ship specimens overnight on dry ice **OR** with adequate ice packs so that specimens arrive at DSHS laboratory cold. Specimens received at room temperature will be unsatisfactory for testing.
4. Do NOT ship ANY prenatal triple screen specimens on Fridays or prior to a Federally observed holiday (for holiday delivery).

Instructions for Shipping Diagnostic Specimens
To ensure proper packaging, please follow these instructions. See also the Triple Screen Packing Diagram below.

1. Obtain enough dry ice to keep the specimens frozen, or enough ice packs to keep specimens cold, for the duration of the shipment.
2. Place the serum specimens in the blue top tube provided by DSHS laboratory, then place them in a biohazard bag and seal. Place biohazard bag, containing the specimens, inside a canister provided by DSHS and place up to four canisters in the bottom of the Styrofoam box.
3. Fill the Styrofoam box with dry ice or ice packs. Ensure canisters are completely covered with dry ice or ice packs and secured.
4. Place the lid on the Styrofoam box. *Make sure the date and time is documented on the G-1C form when specimens are removed from the freezer*.
5. Place the completed G-1C form(s) in a plastic "zip lock" bag. Then place the plastic "zip lock" bag on top of the closed Styrofoam box and seal the fiberboard box.
6. Secure the outer fiberboard box with packing tape.
7. Ensure that a diamond-shaped UN 3373 label is on exterior of the fiberboard box when shipping diagnostic specimens.
8. Dry ice is considered a "dangerous good." If using dry ice:
    a. **Use less than 5 lbs of dry ice**.

b. Mark the blank box and write **"dry ice"** in the **Special Instructions** section of the air bill.
c. Attach a diamond-shaped dry ice label on the package with the number **"9"** and **"UN1845"** on it. *This label must include the amount of dry ice used.* Ensure that this is legible and does not overlap any other label on the fiberboard box.

9. Fill out Section 1 of the air bill that is provided by DSHS and place it inside the sleeve; attach them to the top of the sealed fiberboard box.

CAUTION: MAKE SURE THAT YOUR STYROFOAM BOX IS NOT AIRTIGHT, IF USING DRY ICE!
By following these instructions when shipping diagnostic specimens, your responsibility should be fulfilled.

Shipping Instructions:
Check elsewhere in this section for specific test instructions and information about tube types. For blue top specimen tubes and questions about shipping triple screen specimens, call (800) 687-4363 or (512) 458-7138. For shipping containers, call (512) 458-7661.

Flow Chart for Collection and Shipping of Triple Screen Specimens:

Collect whole blood for triple screen testing from patients who are between 15.0-20.9 weeks of gestational age

↓

Centrifuge specimen and separate serum from RBC within 2 hours.

↓

Place 2 mL of serum in 3 mL blue top tube provided by DSHS Laboratory.

↓

Place specimen(s) in biohazard bags and place in canisters.
Multiple specimens may be contained inside the canisters.
FREEZE canister(s) containing specimens IMMEDIATELY.

↓

After specimens are frozen:

↓

Batch specimens and ship once or twice a week.
Do not ship on Fridays or the day before Federal holidays.

↓

Place up to 4 canisters with frozen specimens in the bottom of the Styrofoam box.

↓

Place and secure ice packs or place dry ice on top of canisters.

↓

Close the Styrofoam box.

↓

Place the Styrofoam box inside the fiberboard box.

↓

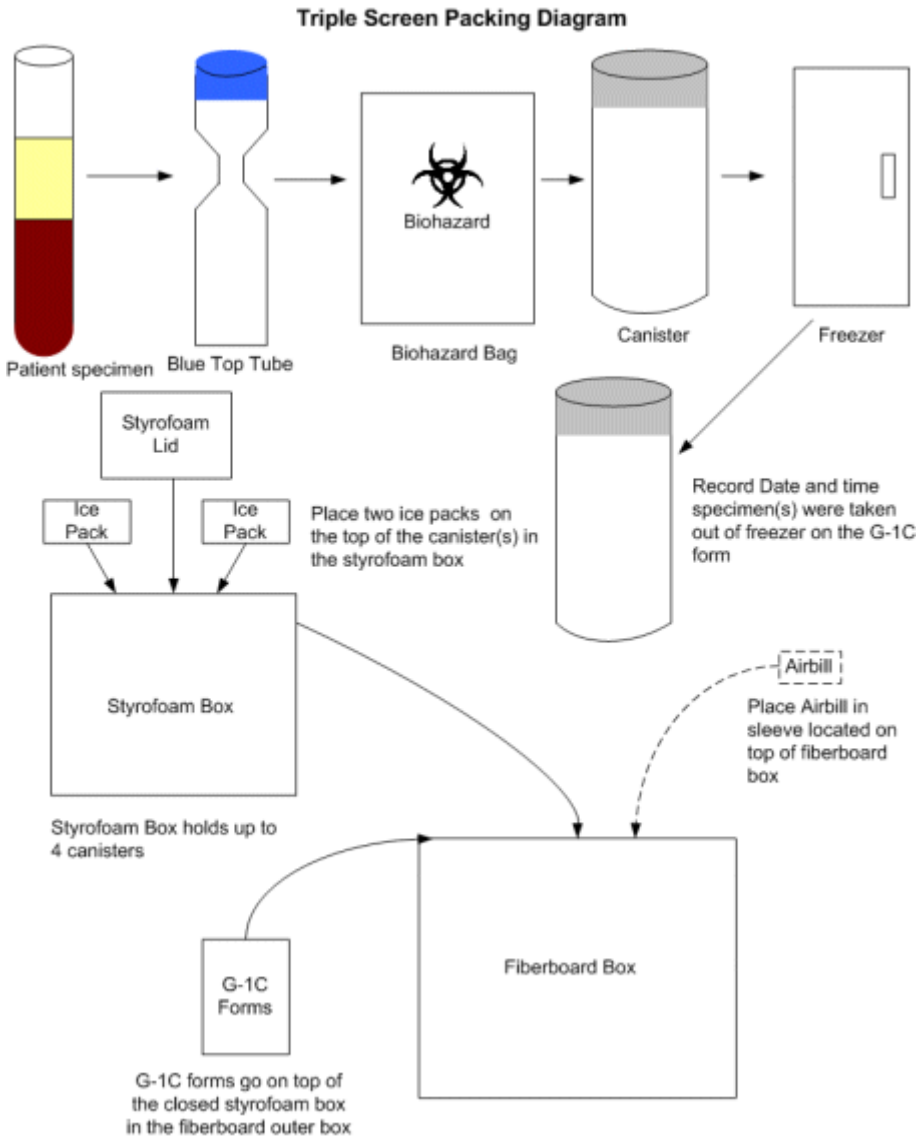
Before sealing the fiberboard box, record Time and Date on each G1-C form for each specimen removed from the freezer.

↓

Place requisition forms on top of the Styrofoam box but inside fiberboard box. Seal fiberboard box.

↓

Place an air bill provided by the Prenatal Testing Laboratory inside the shipping sleeve and attach to top of the sealed fiberboard box; ship specimens overnight.



Newborn Screening specimen collection requirements

Collection of Screening Specimens

The physician or non-physician attending the newborn has the primary responsibility for causing the screening tests to be performed…and that a satisfactory blood specimen is submitted to the department on a properly completed filter paper collection form obtained from the department.[TAC 25 §37.55(a)]

Timing of screening

State rules require that a first newborn screening test be collected within the first 72 hours of life (preferably after 36 hours of age and 24 hours after the first protein feeding), or before hospital discharge. It is preferable to obtain the first specimen 24 hours after the first protein feeding in order to increase the likelihood of detecting PKU. However, if the baby is discharged from the hospital before 24 hours of age, the first screen should be collected prior to discharge. Discharging an infant without collecting a specimen, with intent to collect it later, greatly increases the risk of missing an infant with one of the screened conditions.

Transferred infants

Since the legally responsible party is the one who attended the delivery of the newborn, in the event of transfer to another facility shortly after birth or before screening has been accomplished, the transferring facility must ensure that the next facility is aware of the need for screening and should document this for their records. Responsibility for ensuring the testing, however, still resides with the person attending the birth.

Transfusion

If an infant is to receive a transfusion, a specimen should be collected prior to transfusion because even small transfusions may invalidate galactosemia and hemoglobin screening results. A second specimen should be collected as usual at age one to two weeks. If the infant was not screened prior to transfusion, a third specimen should be collected three months post-transfusion or at the time when red blood cells can be presumed to be of host origin.

Premature infants

Premature infants should receive the first screen before seven days of age and the second screen should be collected 24-36 hours after the baby is established on regular feeds. Premature infants may have persistent abnormalities in newborn screening test results without having an abnormal condition. Prematurity may be associated with physiological elevation of 17-hydroxyprogesterone and reduction of thyroxine. Phenylalanine may be elevated in infants on TPN. Galactosemia and PKU results can be affected by antibiotics. A premature infant with abnormal newborn screening results should be re-screened at one month of age or at the time of discharge (whichever comes first) or when requested by the NBS program. Physical or metabolic signs suggestive of the presence of a screened condition should prompt appropriate diagnostic testing for the suspected disorder immediately. (See Critically Ill and Premature Infants and specific disorders)

Second Test Required

A second test is required at one to two weeks of age. The newborn screening test should be collected on any infant who has not been screened. Even the older infant who appears to be growing and developing normally may be found to have one of the conditions included in screening. Although not legally mandated, infants moving to Texas who have not been screened should be tested if their screening results are not known.

Reports

Reports of screening results and notice of unsatisfactory specimens are usually mailed to the submitter within seven days of receiving the specimen. Abnormal results are also communicated to DSHS case managers to assure appropriate follow-up. A voice response system is available at (512) 458-7300 for 24-hour access to laboratory testing results. A personal identification number (PIN) is required. Please call (512) 458-7319 for additional details. (See Texas Newborn Screening Voice Response System)

Complete the required information on the specimen collection card using a blue or black ball point pen only. Print carefully using block capital letters and stay within the prescribed limits of the computer intake boxes. Do not touch the filter paper blood collection circles while recording the information. Failure to complete the information requested may cause the tests not to be performed. This information is vital for identification and location of infants for follow-up of abnormal test results; it must be accurate, legible, and complete. Computerized remote data entry is also available. Electronic transmission of admissions record information—to the hospital laboratory and then to the Texas Department of Health Laboratory—is time-saving and eliminates possible transcription errors. For more information, interested facilities should contact the Biochemistry and Genetics Branch, Laboratory Services Section at (512) 458-7430.

The first screen is linked with the second screen using the baby's surname, mother's first name, and date of birth. This linking of first and second screens may not occur if this information is recorded erroneously on the specimen collection form, or if the surname is changed after the first specimen is submitted. Mother's maiden name is also required for additional verification of linkage.

Blood Collection

Gloves should be worn for personal safety. Care should be taken to avoid contamination of blood collection circles with antiseptic solutions, powders, lotions, or other materials that may adversely affect the testing process. A videotape and written standard describing proper collection procedures is available for loan from the Biochemistry and Genetics Branch, Laboratory Services Section (512) 458-7430, or it may be purchased from the National Committee for Clinical Laboratory Standards (NCCLS). A descriptive poster illustrating proper blood collection procedure is also available from the Biochemistry and Genetics Branch.

Unsatisfactory Specimens

The Newborn Screening Program receives some blood spot specimens in a condition unacceptable for testing. Collection of a satisfactory specimen is the responsibility of the person attending the birth. Certain types of specimens are known to give invalid results, including old specimens; those with incompletely filled, abraded, discolored, diluted or clotted spots; and those showing serum "rings." In these cases, the newborn screening report will state: "UNSATISFACTORY - PLEASE RESUBMIT." Submitting invalid specimens results in the inconvenience of re-testing and delays the screening of the newborn, placing the newborn at risk for delayed diagnosis of a screened condition. IN CASES OF UNSATISFACTORY RESULTS THE INFANT MUST BE RE- SCREENED AS SOON AS POSSIBLE (even if only one test is reported unsatisfactory).

Declination of Screening

Newborn screening may be declined by a parent who is a member of a recognized religious organization, the teachings of which are contrary to the testing requirement. If a parent objects to testing based on religious grounds, a hospital official is to inform the parent of the consequences of refusal (possible infant death or retardation) and require the parent to complete a statement indicating

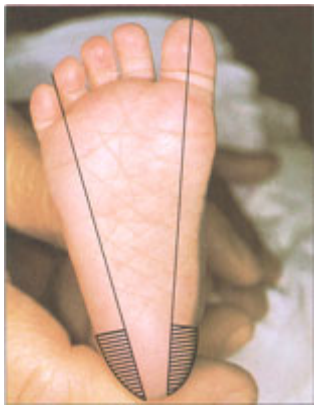
their declination of newborn screening. This signed refusal should be retained in the record of the physician, midwife, or person attending the delivery.

Newborn Screening Blood Specimen Collection and Handling Procedure

1 Equipment:

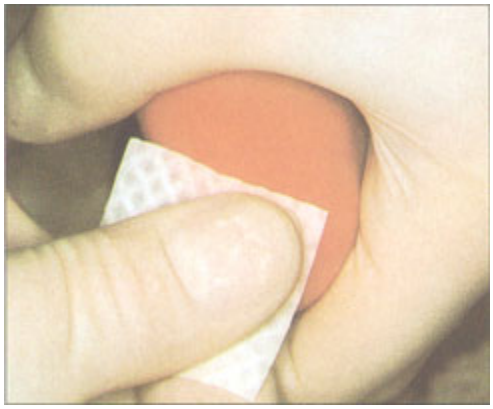
- sterile lancet with tip less than 2.4mm
- sterile alcohol prep
- sterile gauze pads
- soft cloth
- blood collection form
- gloves

2) Complete ALL information. Do not contaminate filter paper circles by allowing the circles to come in contact with spillage or by touching before or after blood collection. Keep "SUBMITTER COPY" if applicable.

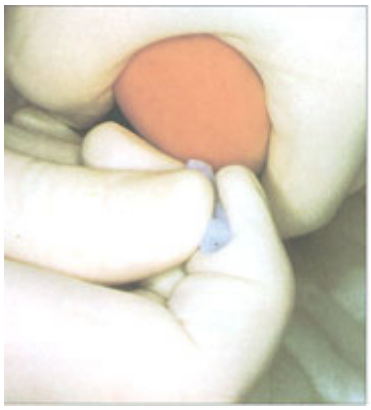


3) Positioning the infant with feet lowered below the heart will help to increase blood flow. The puncture site should be the lateral or medial plantar (sole) surface of the heel. Hatched area indicates safe areas for puncture site.

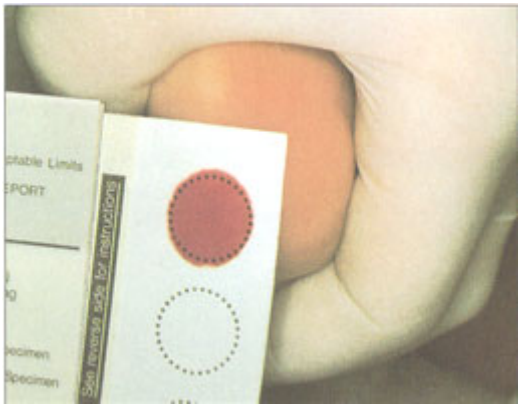
4) Warm the heel to increase blood flow to the area by covering the puncture site for three to five minutes with a warm, moist towel that has been warmed with tap water at a temperature of not more than 42 degrees centigrade.



5) Clean the puncture site with a sterile alcohol pad. Wipe dry with sterile gauze. (Alcohol may cause hemolysis.)



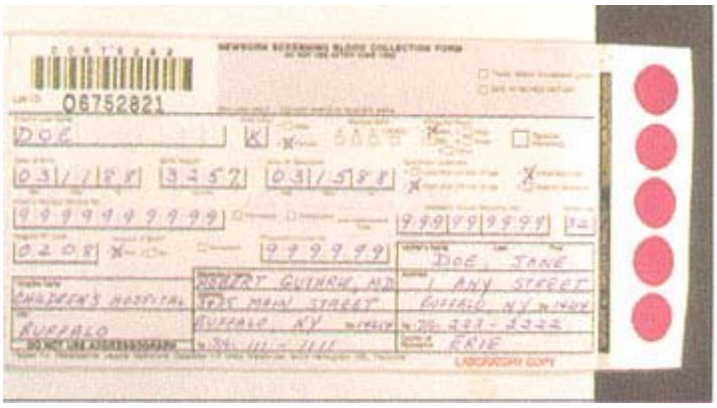
6) Use a sterile disposable lancet or an automatic lancet to perform a swift, clean puncture. Allow a blood drop to form. Wipe away the first drop of blood with dry sterile gauze.



7) To enhance blood flow during collection, very gentle intermittent pressure may be applied to the area surrounding the puncture site. Excessive "milking" causes an admixture of tissue fluids with the blood specimen, invalidating the specimen.

Do not use a capillary tube except as a last resort. Lightly touch the filter paper against a large drop of blood and allow sufficient quantity of blood to soak through to completely fill the circle. Apply blood to one side of the filter paper only, allowing full saturation of each circle before proceeding to the next circle (either side may be chosen for this procedure) and expel approximately 75-100 µl at one time.

8) Fill remaining circles with successive blood drops in the same manner as step 7. Do not layer successive small drops of blood to the same circle. Avoid touching or smearing the blood spots. If a capillary tube is used, do not touch filter with the tube If blood flow is diminished, repeat steps 5 through 7. Care of skin puncture site should be consistent with your institution's procedures.



9) Allow the blood specimens to air-dry for at least 3 hours on a flat, nonabsorbent surface protected from heat or direct sunlight. Do not refrigerate the samples or put in plastic sleeves.

10) Mail collection forms to the TDSHS Laboratory within 24 hours of collection. Do not accumulate specimens before mailing since this may result in specimens too old to test. When placing more than one specimen in an envelope, alternate orientation of collection forms so that blood spots on adjacent forms are not in contact with each other.

Recording Newborn Screening Results

Each practitioner caring for an infant should document that the blood for the newborn screening test has been collected, the date collected, and by whom; when the results were received; and any appropriate follow-up actions taken. Practitioners are encouraged to retain the yellow copy of the form as a means of documenting specimen collection.

Responding to Requests for Re-screening

The Newborn Screening Program may request, by phone or letter, that a child be retested. It is very important that the nine-digit laboratory identification number, which is recorded on the results of the first screen and on the letter sent by the case manager, is written on the resubmitted screen or serum request form. A space for this number is provided on the newborn screening form. Cases confirmed by testing done at laboratories other than the Texas Department of State Health Services Laboratory must be reported to the Newborn Screening Follow-up Program: (512) 458-7700.

Please Remember

- Due to biologic variability, some affected babies may have normal screen results. Physicians still need to be watchful for early signs of these disorders when examining infants in their care. Current screening for congenital adrenal hyperplasia is limited to that caused by 21-hydroxylase deficiency.
- Reporting of one abnormality does not rule out the possibility that the child may have another abnormality. To avoid missing a disorder and to meet the legal requirements for proper screening, always perform the second screen.

Communication

The Newborn Screening Program can be reached during normal business hours at (512) 458-7700. The voice response system is available by calling (512) 458-7300. Program staff take personal interest in infants who may be affected by screened disorders. If a practitioner alerts the program of concerns about an infant, the specimen and report will receive special attention to ensure that no infant is lost or fails to get proper treatment. It is important that the practitioner communicate the final diagnosis and disposition of the infant to the program. This information is also essential for evaluating the quality of the program. If DSHS is not informed of normal confirmatory testing, unnecessary letters or phone calls may be made to the physician or parent.

Texas Health Steps specimen collection and handling

General Suggestions

- See the illustrations below for the correct fill volume of the purple top tubes.
- Label the specimen clearly and legibly with the patient's full name, exactly as it is printed on their Medicaid card. (Suggestion for finger stick collection tubes: write the patient's name on adhesive tape, small address label, medical or masking tape, and attach it to the blood collection tube. Ensure that the label will not fall off easily.)
- Fill out test request forms completely and legibly. Laboratory tests may be performed only if the specimen tube is labeled with the patient's full name on the tube *and* the patient's name on the tube exactly matches the patient's name on the test request form. Make sure to clearly indicate which tests are being requested by marking the appropriate tests on the G-1B form. The Texas Health Steps (EPSDT) Provider/TPI number must be provided in Section 1 Submitter Information to receive results in a timely manner.
- Verify that specimen collection devices such as filter paper and blood collection tubes are not expired.
- If an RPR (syphilis) and HIV test is requested:
    - If collecting specimen using a red top blood collection tube:
        - Collect venous blood in red top blood collection tube.
        - Centrifuge the red top blood collection tube within 2 hours from the time of collection to separate the serum from the red blood cells (clot).
        - To remove the serum from the clot, pipette the serum and transfer the serum to a serum transport tube.
        - Keep specimen cold until shipping.
        - Properly discard the red top blood collection tube and pipette.
        - Package the serum transport tube in a cold shipping box with sufficient cold packs to ensure the specimen arrives cold at the DSHS Laboratory within 5 days of collection.
        - Ship specimen overnight via UPS next day air.
    - If collecting specimen using a gold top blood collection tube with gel serum separator (SST):
        - Collect venous blood in gold top blood collection tube containing a gel serum separator.
        - Centrifuge the gold top blood collection tube within 2 hours from the time of collection to separate the serum from the red blood cells (clot).
        - Keep specimen cold until shipping.
        - Package the serum transport tube in a cold shipping box with sufficient cold packs to ensure the specimen arrives cold at the DSHS Laboratory within 5 days of collection.
        - Ship specimen overnight via UPS next day air.
- If a cholesterol test is requested collect the specimen in a separate red top blood collection tube along with a separate specimen submission form.
- Routinely mail specimens the same day they are collected. If this is not possible, you may refrigerate specimens overnight, but do not freeze whole blood specimens
- When collecting finger stick blood specimens for lead testing, ensure that the person collecting the specimen and the patient wash their hands with soap and water prior to specimen collection.

Supplies to collect and ship specimens to DSHS, including postage paid mailing labels, are provided as part of the routine Texas Health Steps (EPSDT) testing services at DSHS. Request supplies by telephone at 1 (888) 963-7111 ext. 7661 or (512) 458-7661 with a valid Texas Health Steps (EPSDT) provider/TPI number.

Tips to Prevent "Specimen Clotted"

Venipuncture

- Allow the vacuum from the blood collection tube to appropriately fill the collection tube.
- Fill the collection tube to exactly the fill volume (no more, no less) stated on the blood collection tube. Lavender top tubes contain a measured amount of anticoagulant specific for the stated volume on the blood collection tube.
- Mix specimen thoroughly immediately after collection.
- When using a “butterfly” collection system, the tubing from the butterfly to the collection tube does not contain an anticoagulant and clotting can be initiated within the tubing.

Capillary (Finger Stick)

- Ensure the collection site is warm, position the collection site below client’s heart, and obtain a good puncture to ensure good blood flow.
- Wipe away the first drop of blood, which contains tissue fluid and clotting factors that can cause quick clotting.
- Avoid scraping the collection site.
- Fill the collection tube exactly to the fill volume (no more, no less) stated on the blood collection tube. Lavender top tubes contain a measured amount of anticoagulant specific for the stated volume on the blood collection tube.
- Mix specimen thoroughly immediately after collection.

Tips to Prevent "Quantity not sufficient"

Venipuncture

- When using a “butterfly” collection system to collect a venous whole blood specimen with a Vacutainer® tube, attaching the “butterfly” device to the tube causes the “dead space” in the “butterfly” tubing to evacuate enough of the vacuum in the Vacutainer® tube that it can no longer pull the specified volume. To avoid this, use a “waste” or “discard” tube. Once a small amount of blood is drawn into the Vacutainer®, remove this “waste” or “discard” tube and replace it with a second Vacutainer® tube that has not had its vacuum compromised. At this point, the second Vacutainer® tube should pull the appropriate specified volume stated on the blood collection tube. Do not remove the needle from the vein too soon or the vacuum of the tube will not have sufficient time to draw the correct volume. Compare the Vacutainer® tube to the Purple Top Tube Guide by placing the tube up against the guide to ensure the correct volume has been met. The Purple Top Tube Guide can be obtained by calling the DSHS Laboratory and requesting a copy. Additionally, using a syringe and a “butterfly” collection system allows the phlebotomist or medical provider collecting the whole blood specimen to use a syringe of the appropriate size to draw sufficient blood in order to meet the fill volume requirement for the blood collection tube.
- Fill the collection tube exactly (no more, no less) to the fill volume stated on blood collection tube. Lavender top tubes contain a measured amount of anticoagulant specific for the stated volume on the blood collection tube.

Capillary (Finger Stick)

- Ensure the collection site is warm, position the collection site below client's heart, and obtain a good puncture to ensure good blood flow.
- Fill the collection tube exactly to (no more, no less) the fill volume stated on the blood collection tube. Lavender top tubes contain a measured amount of anticoagulant specific for the stated volume on the blood collection tube.
- Mix specimen thoroughly immediately after collection.

Illustrations of Purple Top Tubes

Specimens are rejected unless the stated fill volume on DSHS specified tubes is submitted.

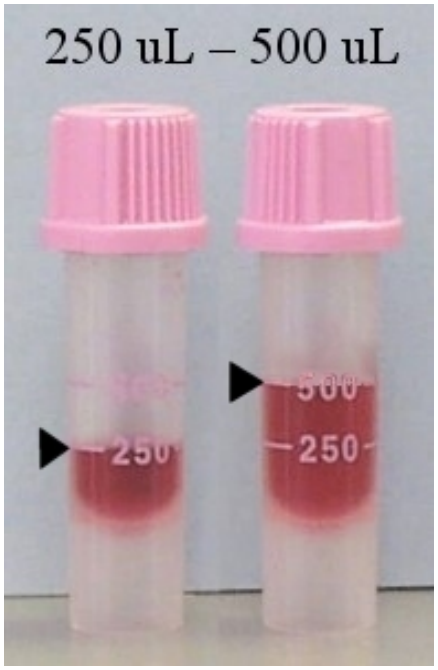
To assist in determining the correct fill volume of the purple top tubes, below are illustrations of the acceptable levels for each type of tube. Each tube must be filled to the manufacturer stated fill volume, or the specimen will be rejected. For example: If you need to collect 4 mL of blood for a test and you only put 4 mL of blood in a 6 mL tube, the specimen will be rejected because the fill volume on the tube is 6 mL. Also, no glass tubes will be accepted.

Becton Dickinson (BD) 2mL Vacutainer® K2 EDTA 3.6mg Tube:

The tube is used for venipuncture draws. The manufacturer stated fill volume for this tube is 2 mL. The Vacutainer should draw the tube's fill volume automatically. The black mark on the label of the tube (indicated by the arrow) is an *estimated* volume mark, not an actual volume mark. The position of the label varies from tube to tube. The 2 mL Vacutainer will draw blood from the vein at a much slower rate than the higher volume Vacutainer tubes, which is appropriate when collecting blood specimens from pediatric patients.

Becton Dickinson (BD) Microtainer® 250 uL – 500 uL Tube

We will accept this tube.



The tube is used for finger/heel sticks. The manufacturer stated fill volume for this tube is in the range of 250 uL minimum to 500 uL maximum. (The arrows point to the 250 uL and 500 uL lines.)

Guidelines for Specific Types of Specimens

Serological Testing

The DSHS Laboratory does not provide blood collection tubes, except for those who are under contract or are eligible under the Texas Health Steps (THSteps) Program; therefore, physicians should have a supply of vacuated blood collection tubes for the collection of blood specimens for serological testing. They may either be serum tubes, silicon coated (red-top tubes), or serum separator tubes (SST) with clot activator and gel for serum separation (red-gray ("tiger") or gold top tubes). Assays will require at least 5mL of whole blood in a tube. General specimen handling requirements are listed below; however, they differ with each assay, so please refer to the test requested in the Lab Tests for Diseases/Agents section of this manual.

Serum may remain on the red blood cells/clot if testing will be performed within 2 hours from the time of collection. Otherwise, serum must be separated from the red blood cells within 2 hours from the time of collection. For whole blood specimens collected in a red top blood collection tube, centrifuge the specimen within 2 hours from the time of collection to separate the serum from the red blood cells (clot). Transfer the serum specimen to a serum transport tube using a pipette (unless using a SST).For whole blood specimens collected with a SST blood collection tube, centrifuge the specimen within 2 hours from the time of collection to separate the serum from the red blood cells (clot). Serum does not need to be transferred to a serum transport tube.

Serum should be kept cold until the serum specimen can be shipped overnight via UPS next day air. Serum specimens should be packaged with sufficient cold packs to ensure the serum specimens arrive cold at the DSHS Laboratory.

Pack specimens in compliance with government regulations covering the transportation of etiologic agents.

To prevent hemolysis in the specimens, avoid bacterial contamination, the presence of water or chemicals in syringes or tubes, or rough treatment. Avoid extremely high temperatures, such as may occur in mail vans and drop boxes in the summer. **Never freeze whole blood.**

How to collect serum sample using serum separator tubes with clot activator:

1. Gently invert tube five (5) times to mix clot activator with blood.
2. Allow blood to clot for a minimum of 30 minutes in a vertical position. Observe a dense clot.
3. Centrifuge at full speed (between 1100 and 1300g) for 10 minutes for swing-head unit or 15 minutes for fixed angle units. A barrier will form, separating serum specimen from clot.
4. Transport spun tube to the laboratory.

A single result is significant in a few serological tests, such as immune status testing. In many cases, single results will be more misleading than helpful. Therefore, the Laboratory Section's policy requires paired specimens, that is two blood specimens collected from two to three weeks apart for most diseases. Collecting the first specimens as soon s possible after the onset of the disease is essential. Single specimens will be accepted for syphilis and HIV serology, immune status testing (i.e. rubella in pregnant women), and IgM antibody tests. Single specimens may also be submitted to the systemic mycoses when a chronic infection is underway.

Sputum

When submitting sputum, be certain that it is from the deeper portion of the lungs. Often saliva only is submitted, and this is usually unsatisfactory. The DSHS Laboratory in Austin provides reference and primary culturing work in mycobacteriology and mycology.

Fecal specimens for bacteriological culturing

Fecal specimens for bacteriological culturing will be accepted only under special circumstances and with prior approval (512) 458-7318. When approved, these specimens must be submitted in Cary-Blair transport medium. Instruction sheet and medium are available upon request. Call (512) 458-7661.

Fecal specimens for intestinal parasites

The examination of fecal specimens for intestinal parasites is still viewed as a reference service and will be offered to any public health clinic, but prior arrangement is required for all other specimens (512) 458-7318. The specimens must not be sent in the bacteriological preservative. The specimen should be divided into two portions, one being placed into a vial of 10 percent Formalin, the second being placed into a vial of PVA (polyvinyl alcohol). The Laboratory provides kits to qualified providers.Call (512) 458-7661.

Fecal specimens for viral isolation

Fecal specimens for viral isolation must not be chemically preserved. Instead, fresh, unpreserved stools must be submitted. Any viral isolation specimen should be maintained at refrigerator temperatures (4-8° C) between the time of collection and the time of receipt in the laboratory. If the expected time between collection and receipt in the laboratory will be greater than 72 hours, freeze specimens after collection and ship on dry ice.

Rabies specimens

The TDSHS Laboratory recommends shipping rabies specimens by bus. Guidelines for shipping rabies specimens are as follows:

- Specimens must be shipped in a sealed, sturdy double container; a Styrofoam container inside a cardboard box works well.
- Place completed Rabies Submission Form (G-9) in a separate plastic bag to keep the form dry.
- Enclose sufficient absorbent material to keep all moisture within the container.
- Specimens should not be frozen because freezing delays and frequently compromises the examination.
- Use sufficient cold packs, to maintain a cool environment, even with a delay of one full day. Wet ice is not recommended. If ice must be used, double bag to prevent leakage. “Zip lock” bags are recommended.

State law requires telephone notification to this Laboratory before shipment of rabies specimens: ***1 (800) 252-8163***

Bacteriology Collection, Transport, and Storage for Specimen types

Abscess (14) General
Collection guidelines: Remove surface exudate by wiping with sterile saline or 70% alcohol **Transport device and/or minimum vol.:** **Transport time and temp:** **Storage time**: **Replica limits:** **Comments:** Tissue or fluid is always superior to a swab specimen. If swabs must be used, collect two, one for culture and one for Gram staining. Preserve swab material by placing in Stuart's or Amies medium
Abscess - Open
Collection guidelines: Aspirate if possible or pass a swab deep into the lesion to firmly sample the lesion's "fresh border" **Transport device and/or minimum vol.:** Swab transport system **Transport time and temp:** <2 h, RT **Storage time:** <2 h, RT **Replica limits:** 1/day/source **Comments:** Samples of the base of the lesion and abscess wall are most productive.
Abscess - Closed
Collection guidelines: Aspirate abscess material with needle and syringe; aseptically transfer all material into anaerobic transport device. **Transport device and/or minimum vol.:**Anaerobic transport system, >1 mL **Transport time and temp:**<2 h, RT **Storage time:**<2 h, RT **Replica limits:**1/day/source **Comments:** Contamination with surface material will introduce colonizing bacteria not involved in the infection process.
Bite wound
Collection guidelines: See Abscess **Transport device and/or minimum vol.:** **Transport time and temp:** **Storage time:** **Replica limits:** **Comments:** Do not culture animal bite wounds <12 h old (agents are usually not recovered) unless signs of infection are present

Blood (139)

Collection guidelines: Disinfect culture bottle; apply 70% isopropyl alcohol or phenolic to rubber stoppers and wait 1 min. Palpate vein before disinfection of venipucture site. To disinfect venipuncture site:
1. Cleanse site with 70% alcohol
2. Swab concentrically, starting at the center with an iodine preparation
3. Allow the iodine to dry
4. Do no palpate vein at this point without sterile glove
5. Collect blood
6. After venipucture, remove iodine from the skin with alcohol

Transport device and/or minimum vol.: Blood culture bottles for bacteria; adult, >20 mL/set (higher vol most productive)
Transport time and temp: <2 h, RT
Storage time: <2 h, RT, or per instructions
Replica limits: 3 set in 24 h
Comments: Acute febrile episode, antimicrobials to be started or changed immediately: 2 sets from separate sites, all within 10 min (before antimicrobials). Nonacurate disease, antimicrobials will not be started or changed immediately: 2 or 3 sets from separate sites all within 24 h at intervals no closer than 3 h (before antimicrobial[s]). Endocarditis, acute; 3 sets from 3 separate sites, within 1-2 h, before antimicrobials if possible. Endocarditis, subacute; 3 sets from 3 separate sites >1h apart, within 24 h. If cultures are negative at 24 h, obtain 2-3 more sets. Fever of unknown origin: 2 or 3 sets from separate sites >1 h apart during a 24-h period. If negative at 24-48 h, obtain 2 or 3 more sets. Some data indicate that an additional aerobic bottle is more productive that the anaerobic bottle. Pediatric: Collect immediately, rarely necessary to document continuous bactermia with hours between cultures.

Bone Marrow aspirate

Collection guidelines: Prepare puncture site as for surgical incision
Transport device and/or minimum vol.: Inoculate blood culture bottle or a lysis-centrifugation tube; plate specimen delivered to laboratory immediately
Transport time and temp: <24 h, RT, if in culture bottle or tube
Storage time: <24 h, RT
Replica limits: 1/day
Comments: Small volumes of bone marrow may be inoculated directly onto culture media. Routine bacterial culture of bone marrow is rarely useful.

Burn

Collection guidelines: Clean and debride the burn
Transport device and/or minimum vol.: Tissue is placed into a sterile screw-cap container; aspirate or swab exudate; transport in sterile container or swab transport system
Transport time and temp: <24 h, RT
Storage time: <24 h, RT
Replica limits:1/day/source
Comments: A-3 to 4-mm punch biopsy specimen is optimum when quantitative cultures are ordered. Process for aerobic culture only. Quantitative culture may or may not be valuable. Cultures of surface samples of burns may be misleading.

Catheter (96) i.v.

Collection guidelines: 1. Clean the skin around the catheter site with alcohol
2. Aseptically remove catheter and clip 5 cm of distal tip directly into a sterile tube
3. Transport immediately to microbiology laboratory to prevent drying
Transport device and/or minimum vol.: Sterile screw-cap tube or cup
Transport time and temp: <15 min, RT
Storage time: <2 h, 4°C
Replica limits: None
Comments: Acceptable i.v. catheters for semiquantitative culture (Maki method); central, CVP, Hickman, Broviac, peripheral, arterial, umbilical, hyperalimentation, Swan-Ganz

Foley catheter

Collection guidelines: Do not culture, since growth represents distal urethral flora
Comments: Not acceptable for culture

Cellulitis, aspirate from area of (14)

Collection guidelines: 1. Cleanse site by wiping with sterile saline or 70 percent alcohol.
2. Aspirate the area of maximum inflammation (commonly the center rather than the leading edge) with a needle and syringe; irrigation with a small amount of sterile saline may be necessary
3. Aspirate saline into syringe, and expel into sterile screw cap tube
Transport device and/or minimum vol.: Sterile tube (syringe transport not recommended)
Transport time and temp: <15 min, RT
Storage time: <24 h RT
Replica limits: None
Comments: Yield of potential pathogens in minority of specimens cultured.

CSF

Collection guidelines: 1. Disinfect site with iodine preparation
Transport device and/or minimum vol.: Sterile screw-cap tubes Minimum amt required; bacteria, >1 mL; AFB, >5 mL
Transport time and temp: Bacteria; never refrigerate; <15 min, RT
Storage time: <2 h, RT
Replica limits: None
Comments: Obtain blood for culture also. If only one (1) tube of CSF is collected, it should be submitted to microbiology first; otherwise submit tube two (2) to microbiology. Aspirate of brain abscess or a biopsy specimen may be necessary to detect anaerobic bacteria or parasites.

Decubitis ulcer (14)

Collection guidelines: A swab is not the specimen of choice (see Comments)
1. Cleanse surface with sterile saline
2. If a sample biopsy is not available, aspirate inflammatory material from the base of the ulcer
Transport device and/or minimum vol.: Sterile tube (aerobic) or anaerobic system (for tissue)
Transport time and temp: <2 h RT
Storage time: <24 h, RT
Replica limits: 1/day/source
Comments: Since a swab specimen of a decubitus ulcer provides no clinical information, it should not be submitted. A tissue biopsy sample or needle aspirate is the specimen of choice.

Dental Culture: gingival, periodontal, periapical, Vincent's stomatitis

Collection guidelines: 1. Carefully cleanse gingival margin and supragingival tooth surface to remove saliva, debris, and plaque
2. Using a periodontal scaler, carefully remove subgingival lesion material and transfer it to an anaerobic transport system
3. Prepare smear for staining with specimen collected in the same fashion
Transport device and/or minimum vol.: Anaerobic transport system
Transport time and temp: <2 h, RT
Storage time: <24 h, RT
Replica limits: 1/day
Comments: Periodontal lesions should be processed only by laboratories equipped to provide specialized techniques for the detection and enumeration of recognized pathogens.

Ear - Inner (4)

Collection guidelines: Tympanocentesis reserved for complicated, recurrent, or chronic persistent otitis media
1. For intact eardrum, clean ear canal with soap solution and collect fluid via syringe aspiration technique (tympanocentesis)
2. For ruptured eardrum, collect fluid on flexible shaft swab via an auditory speculum
Transport device and/or minimum vol.: Sterile tube, swab transport medium, or anaerobic system
Transport time and temp: <2 h, RT
Storage time: <24 h, RT
Replica limits: 1/day/source
Comments: Results of throat or nasopharyngeal swab cultures are not predictive of agents responsible for otitis media and should not be submitted for that purpose.

Ear - Outer (4)

Collection guidelines: 1. Use moistened swab to remove any debris or crust from the ear canal
2. Obtain a sample by firmly rotating the swab in the outer canal
Transport device and/or minimum vol.: Swab transport
Transport time and temp: < 2 h, RT
Storage time: <24 h, 4°C
Replica limits: 1/day/source
Comments: For otitis externa, vigorous swabbing is required since surface swabbing may miss streptococcal cellulitis

Eye (2, 73)

Collection guidelines: separate swabs (premoistened with sterile saline) by rolling over each conjunctiva
2. Medium may be inoculated at time of collection
3. Smear may be prepared at time of collection; roll swab over 1-2-cm area of slide
Transport device and/or min. vol.:inoculation: BAP and CHOC; lab inoculation: swab transport
Transport time and temp:
Storage time:
Replica limits: None
Comments: If possible, sample both conjunctiva, even if only one is infected, to determine indigenous microflora. The uninfected eye can serve as a control with which to compare the agents isolated from the infected eye. If cost prohibits this approach, rely on the Gram stain to assist in interpretation of culture.

Eye - Corneal scrapings (2, 73)

Collection guidelines: 1. Specimen collected by ophthalmologist
2. Using sterile spatula, scrape ulcers or lesions, and inoculate scraping directly onto medium
3. Prepare two (2) smears by rubbing material from spatula onto 1-2-cm area of slide
Transport device and/or minimum vol.: Direct culture inoculations: BHI with 10% sheep blood, CHOC, and inhibitory mold agar
Transport time and temp:<15 min, RT
Storage time:<24 h, RT
Replica limits: None
Comments: If conjunctival specimen is collected do so before anesthetic application, which may inhibit some bacteria. Corneal scrapings are obtained after anesthesia. Include fungal media.

Eye - Vitreous fluid aspirates

Collection guidelines: Prepare eye for needle aspiration of fluid
Transport device and/or minimum vol.: Sterile screw-cap tube or direct inoculation of small amount of fluid onto media
Transport time and temp: <15 min, RT
Storage time: <24 h, RT
Replica limits:1/day
Comments: Include fungal media. Anesthetics may be inhibitory to some etiologic agents.

Feces Routine culture (53)

Collection guidelines: Pass specimen directly into a clean, dry container; transport to microbiology laboratory within 1 hour of collection on transfer to Cary-Blair holding medium
Transport device and/or minimum vol.: Clean, leak-proof, wide-mouth container or use Cary-Blair holding medium (>2 g)
Transport time and temp: Unpreserved; <1 h, RT Holding medium <24 h, RT
Storage time: <24 h, 4°C < 48 h, RT or 4°C
Replica limits: 1/day
Comments: Do not perform routine stool cultures for patients whose length of hospital stay is >3 days and the admitting diagnosis was not gastroenteritis, without consultation with physician. Tests for Clostridum difficile should be considered for these patients. Swabs for routine pathogens are not recommended except for infants (see Rectal swabs).

Feces- C. difficile culture (80)

Collection guidelines: Pass liquid or soft stool directly into a clean, dry container; soft stool is defined as stool assuming the shape of its container.
Transport device and/or minimum vol.: Sterile, leak-proof, wide-mouth container, >5 mL
Transport time and temp: <1 h, RT; 1-24 h, 4°C; >24 h, -20°C or colder
Storage time: 2 days, 4°C for culture3 days as 4°C, or longer at -70°C for toxin test
Replica limits:1 or 2 specimens may be necessary to detect low toxin levels
Comments: Patients should be passing >5 liquid or soft stools per 24-h period. Testing of formed or hard stool is not recommended. Freezing at -2°C or above results in rapid loss of cytotoxin activity.

Feces- E.coli O157: H7 and other Shiga-toxin-producing serotypes (3, 44)

Collection guidelines: Pass liquid or bloody stool into a clean, dry container
Transport device and/or minimum vol.: Sterile, leak-proof, wide-mouth container, or Cary-Blair holding medium (>2 g)
Transport time and temp: Unpreserved: <1 h, RT Swab transport system: <24 h, RT or 4°C
Storage time: <24 h, 4°C <24 h, RT
Replica limits: 1/day
Comments: Bloody or liquid stools collected within 6 days of onset among patients with abdominal cramps have the highest yield. Shiga toxin assay for all EHEC serotypes is better than sorbitol MacConkey culture for O157:H7 only.

Feces- Leukocyte detection (63)

Not recommended for use with patients who have acute infectious diarrhea.
Collection guidelines: Pass feces directly into a clean, dry container; transport to microbiology laboratory within 1 hour of collection, or transfer to ova and parasite transport system (10 percent formalin or PVA)
Transport device and/or minimum vol.: Sterile, leak-proof, wide mouth container 10 percent formalin and/or PVA; >2 mL
Transport time and temp: Unpreserved: <1 h, RT Formalin/PVA: indefinite, RT
Storage time: <24 h, 4°C Indefinite, RT
Replica limits: 1/day
Comments: This procedure should be discouraged because it provides results of little clinical value. A Gram stain or simple methylene blue stain may be used to visualize leukocytes. Commercial detection methods are also available.

Feces- Rectal Swab

Collection guidelines:
Transport device and/or minimum vol.: 1. Carefully insert a swab ca. 1 in. beyond the anal sphincter
2. Gently rotate the swab to sample the anal crypts
3. Feces should be visible on the swab for detection of diarrheal pathogens
Transport time and temp: Swab transport
Storage time: <2 h, RT <24 h, RT
Replica limits: 1/day
Comments: Reserved for detecting Neisseria gonorrhoeae, Shigella, Campylobacter, and herpes simplex virus and anal carriage of group B Streptocoddus and other betahemolytic streptococci, or for patients unable to pass a specimen.

Fistula

See Abscess

Fluids

Abdominal, amniotic, ascites, bile, joint, paracentesis, pericardial, peritoneal, pleural, synovial, thoracentesis (13).
Collection guidelines: 1. Disinfect overlying skin with iodine preparation
2. Obtain specimen via percutaneous needle aspiration or surgery
3. Always submit as much fluid as possible; never submit a swab dipped in fluid
Transport device and/or minimum vol.: Anaerobic transport system, sterile screw-cap tube, or blood culture bottle for bacteria; transport immediately to laboratory Bacteria, >1 mL
Transport time and temp: <15 min, RT
Storage time: <24 h, RT; pericardial fluid and fluids for fungal cultures, <24 h, 4°C
Replica limits: None
Comments: Amniotic and culdocentesis fluids should be transported in an anaerobic system and need not be centrifuged prior to Gram staining. Other fluids are best examined by Gram staining of a cytocentrifuged preparation.

Gangernous tissue

See Abscess
Comments: Discourage sampling of surface or superficial tissue. Tissue biopsy or aspiration should be performed.

Gastric Wash or lavage for mycobacteria (20)

Collection guidelines: Collect in early morning before patients eat and while they are still in bed.
1.Introduce a nasogastric tube into the stomach
2. Perform lavage with 25-50 mL of chilled, sterile distilled water
3. Recover sample and place in a leak-proof, sterile container
Transport device and/or minimum vol.: Sterile, leak-proof container
Transport time and temp: <15 min, RT, or neutralize within 1 h of collection
Storage time: <24 h, 4°C
Replica limits: 1/day
Comments: The specimen must be processed promptly, since mycobacteria die rapidly in gastric washings. Neutralize with sodium bicarbonate when holding for >1 hour.

Biopsy for H. pylori

Collection guidelines: Collected by gastroenterologist during endoscopy
Transport device and/or minimum vol.: Sterile tube with transport medium
Transport time and temp: <1 h, RT
Storage time: <24 h, 4°C
Replica limits: None
Comments: Culture may be needed for antimicrobial testing.

Genital, female Amniotic fluid (182)

Collection guidelines: Aspirate via amniocentesis, or collect during cesarean delivery
Transport device and/or minimum vol.: Anaerobic transport system, >1 mL
Transport time and temp: <2 h, RT
Storage time: <24 h, RT
Replica limits: None
Comments: Swabbing or aspiration of vaginal secretions is not acceptable because of the potential for contamination with the commensal vaginal flora.

Bartholin gland secretions

Collection guidelines: 1. Disinfect skin with iodine preparation
2. Aspirate fluid from ducts
Transport device and/or minimum vol.: Anaerobic transport system, >1 mL
Transport time and temp: <2 h, RT
Storage time: <24 h, RT
Replica limits: 1/day
Comments:

Cervical secretions (5)

Collection guidelines: 1. Visualize the cervix using a speculum without lubricant
2. Remove mucus and secretions
3. Firmly yet gently sample the endocervical canal with a new sterile swab
Transport device and/or minimum vol.: Swab transport
Transport time and temp: <2 h, RT
Storage time: <24 h, RT
Replica limits: 1/day
Comments: See the text for collection and transport need for Chlamydia trachomatis and Neisseria

Cul-de-sac fluid

Collection guidelines: Submit aspirate or fluid
Transport device and/or minimum vol.: Anaerobic transport system, >1 mL
Transport time and temp: <2 h, RT
Storage time: <24 h, RT
Replica limits: 1/day
Comments:

Endometrial tissue and secretions

Collection guidelines: 1. Collect transcervical aspirate via a telescoping catheter
2. Transfer entire amount to anaerobic transport system
Transport device and/or minimum vol.: Anaerobic transport system, >1 mL
Transport time and temp: <2 h, RT
Storage time: <24 h, RT
Replica limits: 1/day
Comments:

Products of conception

Collection guidelines: 1. Submit a portion of tissue in a sterile container
2. If obtained by cesarean delivery, immediately transfer to an anaerobic transport system
Transport device and/or minimum vol.: Sterile tube or anaerobic transport system
Transport time and temp: <2 h, RT
Storage time: <24 h, RT
Replica limits: 1/day
Comments: Do not process lochia, culture of which may give misleading results.

Urethral secretions

Collection guidelines: Collect at least 1 hour after patient has urinated
1. Remove old exudate from the urethral orifice
2. Collect discharge material on a swab by massaging the urethra; for females, massage the urethra against the pubic symphysis through the vagina
Transport device and/or minimum vol.: Swab transport
Transport time and temp: <2 h, RT
Storage time: <24 h, RT
Replica limits: 1/day
Comments: If no discharge can be obtained, wash the periurethral area with Betadine soap and rinse with water. Insert a small swab 2-4 cm into the urethra, rotate it, and leave it in place for at least 2 seconds to facilitate absorption.

Vaginal Secretions

Collection guidelines: 1. Wipe away old secretions and discharge
2. Obtain secretions from the mucosal membrane of the vaginal wall with a sterile swab or pipette
3. If a smear is also needed use a second swab
Transport device and/or minimum vol.: Swab transport
Transport time and temp: <2 h, RT
Storage time: <24 h, RT
Replica limits: 1/day
Comments: For intrauterine devices, place entire device into a sterile container and submit at RT. Gram stain, not culture, is recommended for the diagnosis of bacterial vaginosis.

Genital, female or male lesion

Collection guidelines: 1. Cleanse with sterile saline, and remove lesion's surface with a sterile scalpel blade
2. Allow transudate to accumulate
3. While pressing the base of the lesion, firmly rub base with a sterile swab to collect fluid
Transport device and/or minimum vol.: Swab transport
Transport time and temp: <2 h, RT
Storage time: <24 h, RT
Replica limits: 1/day
Comments: For dark-field examination to detect T. pallidum, touch a glass slide to the transudate, add coverslip, and transport immediately to the laboratory in a humidified chamber (petri dish with moist gauze). T. pallidum cannot be cultured on artificial media.

Genital, male Prostate

Collection guidelines: 1. Cleanse urethral meatus with soap and water
2. Massage prostate through rectum
3. Collect fluid expressed from urethra on a sterile swab
Transport device and/or minimum vol.: Swab transport or sterile tube for >1 mL of specimen
Transport time and temp: <2 h, RT
Storage time: <24 h, RT
Replica limits: 1/day
Comments: Pathogens in prostatic secretions may be identified by quantitative culture of urine before and after massage. Ejaculate may also be cultured.

Urethra

Collection guidelines: Insert a small swab 2-4 cm into the urethral lumen, rotate swab, and leave it in place for at least 2 s to facilitate absorption
Transport device and/or minimum vol.: Swab transport
Transport time and temp: <2 h, RT
Storage time: <24 h, RT
Replica limits: 1/day
Comments:

Pilonidal cyst

See Abscess

Respiratory, lower Bronchoalveolar lavage, brush or wash, endotracheal aspirate

Collection guidelines: 1. Collect washing or aspirate in a sputum trap
2. Place brush in sterile container with 1 mL of saline
Transport device and/or minimum vol.: Sterile container, >1 mL
Transport time and temp: <2 h, RT
Storage time: <24 h, 4°C
Replica limits: 1/day
Comments: A total of 40-80 mL of fluid is needed for quantitative analysis of BAL fluid. For quantitative analysis of brushings, place brush into 1.0 mL of saline.

Sputum, expectorated (8)

Collection guidelines: 1. Collect specimen under the direct supervision of a nurse or physician
2. Have patient rinse or gargle with water to remove excess oral flora.
3. Instruct patient to cough deeply to produce a lower respiratory specimen (not postnasal fluid)
4. Collect in a sterile container
Transport device and/or minimum vol.: Sterile container >1 mL Minimum amount: bacteria, >1 mL
Transport time and temp: <2 h, RT
Storage time: <24 h, 4°C
Replica limits: 1/day
Comments: For pediatric patients unable to produce a sputum specimen, a respiratory therapist should collect a specimen via suction. The best specimen should have <10 squamous cells/100X field (10X objective and 10X ocular).

Sputum, induced (8)

Collection guidelines: 1. Have patient rinse mouth with water after brushing gums and tongue
2. With the aid of a nebulizer, have patients inhale approximately 25 mL of 3-10 percent sterile saline
3. Collect in a sterile container
Transport device and/or minimum vol.: Sterile container, >1 mL
Transport time and temp: <2 h, RT
Storage time: <24 h, 4°C
Replica limits:1/day
Comments: Same as above for sputum, expectorated.

Respiratory, upper Oral

Collection guidelines: 1. Remove oral secretions of debris from the surface of the lesion with a swab; discard the swab
2. Using a second swab, vigorously sample the lesion, avoiding any area of normal tissue
Transport device and/or minimum vol.: Swab transport
Transport time and temp: <2 h, RT
Storage time: <24 h, 4°C
Replica limits: 1/day
Comments: Discourage sampling of superficial tissue for bacterial evaluation. Tissue biopsy specimens or needle aspirates are the specimens of choice.

Nasal

Collection guidelines: 1. Insert a swab, premoistened with sterile saline, approximately 1-2 cm into the nares
2. Rotate the swab against the nasal mucosa
Transport device and/or minimum vol.: Swab transport
Transport time and temp: <2 h, RT
Storage time: <24 h, 4°C
Replica limits: 1/day
Comments: Anterior nose cultures are reserved for detecting staphylococcal carriers or for nasal lesions.

Nasopharynx

Collection guidelines: 1. Gently insert a small swab (e.g., calcium alginate) into the posterior nasopharynx via the nose
2. Rotate swab slowly for 5 seconds to absorb secretions
Transport device and/or minimum vol.: Direct medium inoculation at bedside or examination table, swab transport
Transport time and temp: Plates: >15 min, RT; swabs; <2 h, RT
Storage time: <24 h, 4°C
Replica limits: 1/day
Comments:

Throat or pharynx

Collection guidelines: 1. Depress tongue with a tongue depressor
2. Sample the posterior pharynx, tonsils, and inflamed areas with a sterile swab
Transport device and/or minimum vol.: Swab transport
Transport time and temp:
Storage time: <24 h, 4°C
Replica limits: 1/day
Comments: Throat swab cultures are contraindicated in patients with epiglottis. Swabs for Neisseria gonorrhoeae should be placed in charcoal-containing transport medium and plated <12 h after collection. JEMBEC, Biobags, and the GonoPak are better for transport at RT.

Tissue

Collection guidelines: Collected during surgery or cutaneous biopsy procedure
Transport device and/or minimum vol.: Anaerobic transport system or sterile, screw-cap container; add several drops of sterile saline to keep small pieces of tissue moist
Transport time and temp:
Storage time:
Replica limits: 1/day
Comments: Always submit as much tissue as possible. If excess tissue is available, save a portion of surgical tissue at -70°C in case further studies are needed. Never submit a swab that has been rubbed over the surface of a tissue. For quantitative study, a sample of 1 cm^3 is appropriate.

Urine Female, midstream (25)

Collection guidelines: 1. While holding the labia apart, begin voiding
2. After several milliliters has passed, collect a midstream portion without stopping the flow of urine
3. The midstream portion is used for bacterial culture
Transport device and/or minimum vol.: Sterile, wide-mouth container, >1 mL, or urine transport tube with boric acid preservative
Transport time and temp: Unpreserved: <2h, RT; preserved: <24 h, RT
Storage time: <24 h, 4°C
Replica limits: 1/day
Comments: Chlamydial antigen detection in urine from women is less sensitive than in urine from men (148). Urine is toxic to cell lines and is therefore not the specimen of choice for chlamydial culture. Cleansing before voiding does not improve urine specimen quality; i.e. midstream urines are equivalent to clean-catch midstream urines (91, 132).

Urine, Male, midstream

Collection guidelines: 1. While holding foreskin retracted, begin voiding
2. After several milliliters has passed, collect a midstream portion without stopping the flow of urine
3. The midstream portion is used for culture
Transport device and/or minimum vol.: Sterile, wide-mouth container, >1 mL, or urine transport tube with boric acid preservative
Transport time and temp: Unpreserved: <2h, RT
Storage time: <24 h, 4°C
Replica limits: 1/day
Comments: First part of urine stream is used for probe tests and antigen test for chlamydia. Collect specimen for probe and antigen tests at least 2 hours after last urination

Straight catheter (25)

Collection guidelines: Thoroughly cleanse the urethral opening with soap and water
2. Rinse area with wet gauzepads
3. Aseptically, insert catheter into the bladder
4. After allowing approximately 15 mL to pass, collect urine to be submitted in a sterile container
Transport device and/or minimum vol.: Sterile, leak-proof container or urine transport tube with boric acid preservative
Transport time and temp: Unpreserved: <2h, RT; preserved <24 h, RT
Storage time:
Comments: Catheterization may introduce members of the urethral flora into the bladder and increase the risk of iatrogenic infection.

Indwelling catheter
Collection guidelines: 1. Disinfect the catheter collection port with 70 percent alcohol 2. Use needle and syringe to aseptically collect 5-20 mL of urine 3. Transfer to a sterile tube or container **Transport device and/or minimum vol.:** Sterile leak-proof container or urine transport tube with boric acid preservative **Transport time and temp:** Unpreserved: <2 h, RT; preserved: <24 h, RT **Storage time:** **Replica limits:** **Comments:** Patients with indwelling catheters always have bacteria in their bladders. Do not collect urine from these patients unless they are symptomatic
Wound
(See Abscess)

Mycobacteriology (AFB) Collection, Transport, and Storage

Abscess - General

Collection guidelines: Remove surface exudate by wiping with sterile saline or 70 percent alcohol. Collect fluid abscess material with Luer tip syringe and/or remove tissue aseptically.
Transport device and/or minimum vol.: Fluid abscess material should be submitted in a sterile leak-proof container such as a sterile 50 mL conical tube. Tissue should be submitted in 2 to 3 mL sterile saline in a sterile leak-proof container such as a sterile 50 mL conical tube. Do not transport specimen in culturette or in transport medium.
Transport time and temp: As soon as possible, RT
Storage time: If transport is delayed for more than one hour, refrigerate specimen.
Replica limits: 1/day/source
Comments: Tissue or fluid is preferred. A swab is discouraged unless it is the only specimen available; submit swabs in 2 to 3 mL sterile saline. Swabs submitted in transport medium or culturette tube are unacceptable. Do not freeze or preserve tissue.

Abscess - Open

Collection guidelines: Aspirate if possible. Aspirate material from under the margin of the lesion/abscess. Remove tissue aseptically. Transport device and/or minimum vol.: Fluid abscess material should be submitted in a sterile leak-proof container such as a sterile 50 mL conical tube. Tissue should be submitted in 2 to 3 mL sterile saline in a sterile leak-proof container such as a sterile 50 mL conical tube. Do not transport specimen in culturette or in transport medium.
Transport time and temp: As soon as possible, RT
Storage time: If transport is delayed for more than one hour, refrigerate specimen.
Replica limits: 1/day/source
Comments: Tissue or fluid is preferred. A swab is discouraged unless it is the only specimen available; submit swabs in 2 to 3 mL sterile saline. Swabs submitted in transport medium or culturette tube are unacceptable. Do not freeze or preserve tissue.

Blood

Collection guidelines:
Palpate vein before disinfection of venipucture site.
Disinfection of venipuncture site:
1. Cleanse site with 70 percent alcohol
2. Swab concentrically, starting at the center with an iodine preparation
3. Allow the iodine to dry
4. Do no palpate vein at this point without sterile glove
5. Collect blood; mix contents of blood collection tube after collecting.
6. After venipucture, remove iodine from the skin with alcohol

Transport device and/or minimum vol.: 10 mL Yellow top collectors preferred (must contain SPS only); minimum volume is 1 mL.
Transport time and temp: As soon as possible, RT
Storage time: RT. Do not refrigerate or freeze blood specimens
Replica limits: 1/day
Comments:

Bone Marrow aspirate
Collection guidelines: Prepare puncture site as for surgical incision. **Transport device and/or minimum vol.:** Submit in sterile leak-proof container such as sterile 50 mL conical tube. **Transport time and temp:** As soon as possible, RT **Storage time:** RT. Do not refrigerate or freeze blood specimens **Replica limits:** 1/day **Comments:**
Cellulitis, aspirate from area of
Collection guidelines: 1. Cleanse site by wiping with sterile saline or 70 percent alcohol. 2. Aspirate the area of maximum inflammation (commonly the center rather than the leading edge) with a needle and syringe; irrigation with a small amount of sterile saline may be necessary 3. Aspirate saline into syringe, and expel into sterile leak-proof container such as a sterile 50 mL conical tube **Transport device and/or minimum vol.:** Sterile leak-proof container such as a sterile 50 mL conical tube **Transport time and temp:** As soon as possible, RT **Storage time:** **Replica limits:** 1/day **Comments:** A swab is discouraged unless it is the only specimen available; submit swabs in 2 to 3 mL sterile saline. Swabs submitted in transport medium or culturette tube are unacceptable.
CSF
Collection guidelines: 1. Disinfect site with iodine preparation **Transport device and/or minimum vol.:** Sterile leak-proof container such as 50 mL conical tube. Minimum amount required: 2-3 mL **Transport time and temp:** As soon as possible, RT **Storage time:** RT. Do not refrigerate or freeze CSF specimen. **Replica limits:** None **Comments:**
Eye (exudates)
Collection guidelines: Aspirate if possible. Collect material in Luer tip syringe. **Transport device and/or minimum vol:** Exudate should be submitted in a sterile leak-proof container such as a sterile 50 mL conical tube. **Transport time and temp:** As soon as possible, RT **Storage time:** If transport is delayed for more than one hour, refrigerate specimen **Replica limits:** None **Comments:**

Eye - Corneal scrapings

Collection guidelines: 1. Specimen collected by ophthalmologist
2. Using sterile spatula, scrape ulcers or lesions, and inoculate scraping directly onto medium
Transport device and/or minimum vol.: Direct culture inoculations: BHI with 10 percent sheep blood agar plate or chocolate agar plates
Transport time and temp: As soon as possible, RT
Storage time:
Replica limits: None
Comments: Please notify supervisor at (512) 458-7342 prior to shipping this specimen type. Fungal isolation media should also be included but fungal isolation test is not available at TDSHS without prior approval.

Feces

Collection guidelines: Pass specimen directly into a sterile leak-proof container. Do not use holding medium or transport medium.
Transport device and/or minimum vol.: Sterile**,** leak-proof, container such as a 50 mL conical tube; minimum volume is 1 gm.
Transport time and temp: Unpreserved; As soon as possible, RT.
Storage time: If transport is delayed for more than one hour, refrigerate specimen
Replica limits: 1/day
Comments: Do not submit rectal swabs for mycobacterial culture. Do not freeze specimen.

Fluids

Abdominal, amniotic, ascites, bile, joint, paracentesis, pericardial, peritoneal, pleural, synovial, thoracentesis
Collection guidelines: 1. Disinfect overlying skin with alcohol or iodine preparation
2. Obtain specimen via percutaneous needle aspiration or surgery
3. Always submit as much fluid as possible; never submit a swab dipped in fluid
Transport device and/or minimum vol.: Sterile leak-proof container such as a 50 mL conical tube; Minimum volume is 10-15 mL.
Transport time and temp: As soon as possible, RT
Storage time:
Replica limits: None
Comments: Maximum volume recommended is 15 mL. Bloody specimens can be collected and submitted in 10 mL Yellow top blood collection tube.

Gastric Wash or lavage for mycobacteria

Collection guidelines: Collect in early morning before patients eat and while they are still in bed.
1.Introduce a nasogastric tube into the stomach
2. Perform lavage with 25-50 mL of chilled, sterile distilled water
3. Recover sample and place in a leak-proof, sterile container
Transport device and/or minimum vol.: Sterile, leak-proof container such as sterile 50 mL conical tube; minimum volume is 5-10 mL.
Transport time and temp: Neutralize within 1 hour of collection , transport as soon as possible at RT
Storage time:
Replica limits:1/day on three (3) consecutive days
Comments: Specimen must be processed promptly, as mycobacteria die rapidly in gastric washings. Neutralize with 100 mg sodium carbonate. Maximum. volume of specimen recommended is 15 mL.

Endometrial tissue

Collection guidelines: 1. Collect tissue aseptically during endometrial biopsy procedure.
Transport device and/or minimum vol.: Sterile leak-proof container; if dry, add up to 5 mL sterile saline for transport.
Transport time and temp: RT
Storage time: RT
Replica limits: 1/day
Comments: Do not freeze or preserve tissue specimen.

Vaginal Secretions

Collection guidelines: 1. Wipe away old secretions and discharge
2. Obtain secretions from the mucosal membrane of the vaginal wall with a sterile pipette
Transport device and/or minimum vol.: Submit secretions in sterile leak-proof container; do not use transport medium**.**
Transport time and temp: As soon as possible, RT
Storage time: If transport is delayed for more than one hour, refrigerate specimen
Replica limits: 1/day
Comments: A swab is discouraged unless it is the only specimen available; submit swabs in 2 to 3 mL sterile saline. Swabs submitted in transport medium or culturette tube are unacceptable.

Skin lesion

Collection guidelines: 1. Cleanse with sterile saline, and remove lesion's surface with a sterile scalpel blade
2. Allow transudate to accumulate
3. While pressing the base of the lesion, collect transudate with sterile syringe. Place contents of syringe in sterile leak-proof container.
4. If tissue is collected, place tissue in sterile leak-proof container and add 2 to 3 mL sterile saline for transport.
Transport device and/or minimum vol.: Sterile leak-proof container such as a sterile 50 mL conical tube**.**
Transport time and temp: As soon as possible, RT
Storage time: If transport is delayed for more than one hour, refrigerate specimen
Replica limits: 1/day
Comments: A swab is discouraged unless it is the only specimen available; submit swabs in 2 to 3 mL sterile saline. Swabs submitted in transport medium or culturette tube are unacceptable.

Respiratory, lower Bronchoalveolar lavage, brush or wash, endotracheal aspirate, transtracheal aspirate

Collection guidelines: 1. Collect washing or aspirate in a sputum trap
2. Place brush in sterile leak-proof container with up to 5 mL of saline
Transport device and/or minimum vol.: Sterile container such as a sterile 50 mL conical tube; minimum volume is 3 mL
Transport time and temp: As soon as possible, RT
Storage time: If transport is delayed for more than one hour, refrigerate specimen
Replica limits: 1/day
Comments:

Sputum, expectorated

Collection guidelines: 1. Collect specimen under the direct supervision of a nurse or physician
2. Have patient rinse or gargle with water to remove excess oral flora.
3. Instruct patient to cough deeply to produce a lower respiratory specimen (not postnasal fluid)
4. Collect in a sterile container
Transport device and/or minimum vol.: Sterile container such as 50 mL conical tube; minimum volume is 3 mL
Transport time and temp: As soon as possible, RT
Storage time: If transport is delayed for more than one hour, refrigerate specimen
Replica limits:1/day on 3 consecutive days
Comments: Early morning sputum specimen is preferred. Do not pool sputum specimens.

Sputum, induced

Collection guidelines: 1. Have patient rinse mouth with water after brushing gums and tongue
2. With the aid of a nebulizer, have patients inhale approximately 25 mL of 3-10% sterile saline
3. Collect in a sterile leak-proof container
Transport device and/or minimum vol.: Sterile leak-proof container such as a 50 mL conical tube; minimum volume is 3 mL
Transport time and temp: As soon as possible, RT
Storage time: If transport is delayed for more than one hour, refrigerate specimen
Replica limits:1/day on three consecutive days
Comments: Same as above for sputum, expectorated.

Tissue/lymph node

Collection guidelines: Collected during surgery or cutaneous biopsy procedure
Transport device and/or minimum vol.: Sterile leak-proof container such as sterile 50 mL conical tube
Transport time and temp: As soon as possible, RT
Storage time:
Replica limits:1/day
Comments: Always submit as much tissue as possible. Add 2 to 3 mL sterile saline to tissue for transport.

Urine Female, midstream

Collection guidelines: 1. While holding the labia apart, begin voiding
2. After several milliliters has passed, collect a midstream portion without stopping the flow of urine
3. The midstream portion is used for bacterial culture
Transport device and/or minimum vol.: Sterile, leak-proof container such as sterile 50 mL conical tube; minimum volume is 10-15 mL. Prefer up to 40 mL.
Transport time and temp: As soon as possible, RT
Storage time: If transport is delayed for more than one hour, refrigerate specimen
Replica limits:1/day on 3 consecutive days.
Comments: First morning specimen should be collected. Do not pool urine specimens.

Urine, Male, midstream
Collection guidelines: 1. While holding foreskin retracted, begin voiding 2. After several milliliters has passed, collect a midstream portion without stopping the flow of urine 3. The midstream portion is used for culture **Transport device and/or minimum vol.:** Sterile, leak-proof container such as sterile 50 mL conical tube; minimum volume is 10-15 mL. Prefer up to 40 mL. **Transport time and temp:** As soon as possible, RT **Storage time:** If transport is delayed for more than one hour, refrigerate specimen **Replica limits:** 1/day on 3 consecutive days **Comments:** First morning specimen should be collected. Do not pool urine specimens
Straight catheter
Collection guidelines: Thoroughly cleanse the urethral opening with soap and water 2. Rinse area with wet gauzepads 3. Aseptically, insert catheter into the bladder 4. After allowing approximately 15 mL to pass, collect urine to be submitted in a sterile container **Transport device and/or minimum vol.:** Sterile, leak-proof container such as sterile 50 mL conical tube; minimum volume is 10-15 mL. Prefer up to 40 mL. **Transport time and temp:** As soon as possible, RT **Storage time:** **Replica limits:** 1/day on 3 consecutive days **Comments:** First morning specimen should be collected. Do not pool urine specimens
Indwelling catheter or suprapubic tap
Collection guidelines: 1. Disinfect the catheter collection port with 70% alcohol 2. Use needle and syringe to aseptically collect 5-20 mL of urine 3. For suprapubic tap, use Luer tip syringe to collect as much as possible. 4. Transfer to a sterile tube or container **Transport device and/or minimum vol.:** Sterile leak-proof container such as sterile 50 mL conical tube; minimum volume is 10-15 mL **Transport time and temp:** As soon as possible, RT **Storage time:** **Replica limits:** **Comments:**
Wound
See Abscess

Specimen management for infrequently encountered organisms

Organism (disease)	Specimen of choice	Transport issues	Comments
Bartonella sp (cat scratch fever)	Blood, tissue, lymph node aspirate	1 wk at 4°C; indefinitely at -70°C	May see organisms in or on erythrocytes with Giemsa stain. Use Warthin Starry silver stain for tissue. SPS is toxic
Borrelia burgdorferi (Lyme disease)	Skin biopsy at lesion periphery, blood, CSF	Keep tissue moist and sterile; hand carry to laboratory if possible	Consider PCR in addition to culture. Culture yield is low. Warthin-Starry silver stain tissue. AO and Giemsa for blood and CSF
Borrelia sp. (relapsing fever)	Blood smear (blood)	Hand carry to laboratory if possible	Use direct wet mount in saline for dark-field microscopy. Stain with Wright's or Giemsa stain. Blood culture is unreliable.
Brucella sp.[b]	Blood bone marrow	Transport at room temperature; pediatric lysis-centrifugation tube is helpful	Routine blood culture bottles are useful if held 30 days. Blind subculture may be necessary. Joint fluid culture in arthritis. Notify laboratory if Brucella suspected
Klebisella granulomatis (granuloma inguinale; donovanosis)	Tissue, subsurface scrapings	Transport at room temperature	Mostly a tropical disease. Stain with Wright's or Giemsa stain. Epithelium alone is adequate. Organism cannot be cultured.
Rickettsia (spotted fevers; typhus)	Serum, blood, tissue	Blood and tissue are frozen at -70°C	Refer isolation to reference laboratory. Serologic diagnosis is preferred.
Organism (disease)	Specimen of choice	Transport issues	Comments
Ehrlichia sp.	Blood smear, skin biopsy, blood (with heparin or EDTA anticoagulant), CSF, serum	Material for culture sent on ice; keep tissue moist and sterile; hold at 4 to 20°C until tested or a t -70°C for shipment; transport on ice or frozen for PCR test	Serologic diagnosis preferred. Fix smear in methanol. Tissue stained with FA or Gimenez stain. Refer isolate to reference laboratory. CSF for direct examination and PCR.

Francisella sp. (tularemia)[b]	Lymph node aspirate, scrapings, lesion biopsy, blood, sputum	Rapid transport to laboratory or freeze; ship on dry ice	Send to reference laboratory. Serologic testing helpful. Gram stain of tissue is not productive. IFA available. Culture effective 10% of the time.
Leptospira sp.	Serum, blood (citrate containing anticoagulants should not be used), CSF (1st wk), urine (after 1st wk)	Blood <1 h; urine, <1 h or dilute 1:10 in 1% bovine serum albumin and store at 4-20°C or neutralize with sodium bicarbonate	Serologic testing most helpful. Acidic urine is detrimental. Dark-field microscopy and direct FA available. Warthin-Starry silver stain for tissue.
Streptobacillus sp. (rat bite fever; Haverhill fever)	Blood, aspirates of joint fluid	High-volume bottle preferred	Do not refrigerate. Requires blood, serum, or ascitic fluid for growth. SPS is inhibitory. AO staining is helpful.

Guidelines for Specimen Shipping and Mailing

Shipping Overview

Submitters are responsible for shipping specimens in conformity with all safety and labeling regulations. Be aware that many commercial carriers no longer accept specimens. When using any carrier, including the bus service or the U.S. Postal Service, package specimens to avoid leakage or breakage. All specimen mailing containers supplied by the Laboratory meet current Department of Transportation (DOT) and United States Postal Service (USPS) requirements for the shipment of Biological Substance, Category B. Specimens must be packed in triple containment with sufficient absorbent material enclosed to absorb the entire volume of liquid. The container used *must* meet current DOT and USPS regulations.

- Shipment of infectious agents requires specialized training and United Nations (UN)-approved packaging that the Lab does not provide.
- Always exert the maximum protection for the sake of those who handle the parcels and to avoid jeopardizing the system for shipping specimens

Laboratory policy: **ALL** blood specimens in a container will be considered broken if one tube in that container is broken during shipment.

Mailing Containers/Completion of Forms

The Laboratory provides specimen mailing containers and labels to physicians and public health laboratories and water sample containers to any citizen upon request. The containers are the property of the State of Texas and must not be used for any purpose other than the shipment of specimens to the TDSHS laboratory. The mailing containers and labels meet current Department of Transportation (DOT) and United States Postal Service (USPS) regulations for shipping Biological Substance, Category B.

- Shipping *infectious* specimens requires special mailing containers that the Lab does not supply.
- **TDSHS request form must be included with every specimen in the same container.**

Forms should be completed as follows:

- Use **BOLD CAPITAL BLOCK LETTERS** to complete all information that is requested on the form.
- If the patient is Medicaid eligible, you *must* provide the Medicaid number.
- For THSteps (EPSDT) specimens, you *must* provide the Medicaid number.
- Date of Birth, Date of Collection, and test request are required.
- **Unidentified or improperly identified specimens are unsatisfactory and they will not be tested.**

We will test specimens identified by number only; however, we will not report the results until a patient's name is provided. Good laboratory practice recommends, and our federal license requires, the patient's name on the specimen vial.

The patient's name on the specimen requisition form and the specimen must be the same. If they are not the same, the specimen will not be tested.

Submission of Specimens through the U.S. Postal System

The requirements for the submission of Biological Substance, Category B through the U.S. Postal System are:

1. Definition: "Biological Substance, Category B means any human or animal material, including excreta, secreta, blood and its components, tissue, and tissue fluids being transported for diagnostic or investigational purposes."
2. Quantity: 50 mL or less per mail piece. Two or more primary receptacles may be included per mail piece.
3. Secondary container (liner): must contain sufficient absorbent materials to absorb the entire contents of primary containers in case of breakage or leakage.
4. Outer mailer: must be properly labeled.
5. Mailing unit must pass current shipping regulations for Biological Substance, Category B.

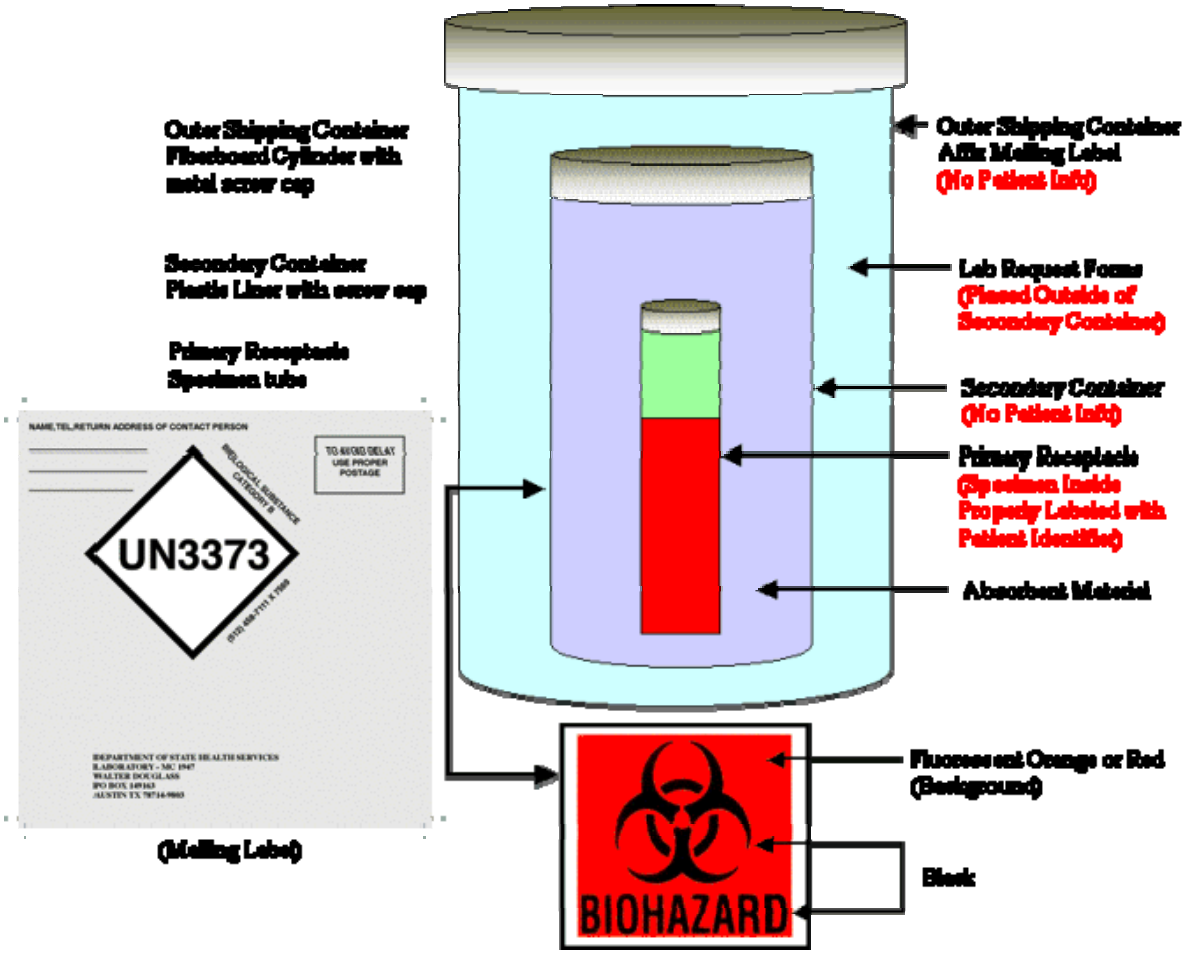
The Texas Department of State Health Services Laboratory, effective immediately, will only supply mailing containers for Biological Substance, Category B. Use of TDSHS containers will insure compliance with U.S. Postal and DOT requirements.

The definition of an acceptable triple container is:

1. primary receptacle: a bottle or tube in which the specimen is collected or held, such as a feces bottle, test tube, or tube (vacutainer) of blood or serum; leak proof and securely sealed; surrounded by absorbent material capable of taking up the entire contents of the primary receptacle(s); held within the secondary container;
2. secondary container: leak proof, securely sealed; placed within the strong outer mailer; Biohazard sticker affixed;
3. outer mailer or container constructed of fiberboard or other equivalent material, clearly and durably marked "Biological Substance, Category B."

Packaging and Labeling Biological Substance, Category B

Do not put any patient information on outer or secondary containers or lids.



Biohazard Label should be on Secondary Container.
DO NOT put Biohazard Label on Outer Container.

Packaging and Shipping Blood Tubes

Containers are available in three sizes for blood specimens. You may order for: 1 specimen, 4 specimens, and 7 specimens. In order to insure the satisfactory receipt and proper testing of your specimens in our Laboratory, it is necessary to:

1. **Label each tube of blood or serum with the name of the patient exactly the way it is written on the laboratory request form**;
2. Put absorbent material, such as paper towels, around each tube, sufficient to absorb the entire contents of the tubes, prior to placing the tubes in the secondary plastic liner;
3. Wrap the properly completed laboratory request form(s) {must have the name of patient and a correct return address} around the secondary plastic liner. Place the secondary container in the fiberboard cylinder; and
4. Attach the proper mailing label to the outside container before the specimens are mailed.

Instructions for Packing Blood Tubes for Shipment

The number of blood tubes broken in transit can be greatly reduced or eliminated by using appropriate packaging and following these simple instructions.

1.) Assemble components.

2.) Place absorbent into bottom of liner.

3.) Wrap tubes in paper towels.

4.) Place tubes in liner.

5.) Place absorbent on top of tubes and screw on plastic liner cap.

6.) Place lab form around the outside of the liner. Place liner in cardboard mailer. (If applicable, insert DSHS Snap-apart Card for Hemoglobin Electrophoresis Testing between the cardboard mailer and liner.) Screw on appropriate, well-fitting metal cap.

Note: Only use mailers approved for shipping Biological Substance, Category B. Questions on proper packaging and shipment of blood tubes should be directed to the Specimen Acquisition Branch at (512) 458-7598.

Cholesterol, Lipid Profile, and Glucose Packing Instructions and Diagram

General Instructions:

1. Submit a G-1B form for each patient with corresponding specimen tube.
2. Retain a copy of the G-1B submission form for your records.
3. Clearly label each specimen with the patient's first and last name as written on the G-1B specimen submission form. Pre-printed patient labels used for specimen identification MUST match the patient's name on the submission form.
4. Specimens must be triple-contained.

Special Requirements:

Required Specimen Type: Collect specimens for cholesterol and lipid profiles in a red top tube. Remove serum from clot within 2 hours of collection. Transfer at least 1 mL of serum to another plastic transport tube. Plastic transport tube can be a plain blood collection tube.
Collect specimens for glucose testing in gray top tubes. Plasma must be separated from red blood cells within 24 hours from time of collection.

Special Instructions:

1. Allow samples to clot completely before centrifugation. Immediately transfer serum/plasma to transport tube and freeze (-20 degrees C or lower). Batching of specimens for shipment is recommended.
2. Specimens MUST be kept frozen until shipping is initiated. Ship specimens overnight on dry ice **OR** with adequate ice packs so that specimens arrive at DSHS laboratory cold. Specimens received at room temperature will be unsatisfactory for testing.
3. Do NOT ship ANY cholesterol, lipid profile or glucose specimens on Fridays or prior to a federally observed holiday.

Instructions for Shipping Temperature-sensitive Biological Substance, Category B:
To ensure proper packaging, please follow these instructions:

1. Obtain enough dry ice to keep the specimens frozen **or** enough ice packs to keep specimens cold for the duration of the shipment.
2. Place the frozen specimen(s) in mailing canister and seal. Place up to 4 canisters in the bottom of the Styrofoam box.
3. Fill the Styrofoam box with dry ice **or** ice packs. Ensure canisters are completely covered with dry ice or ice packs, and secured.
4. Place the lid on the Styrofoam box. *Make sure the date and time is documented on each G-1B form when specimens are removed from the freezer. Please circle freezer to indicate specimens were removed from the freezer not the "fridge".*

5. Place the completed G-1B form(s) in a plastic "zip lock" bag. Then place the plastic "zip lock" bag on top of the closed Styrofoam box and seal the fiberboard box.
6. Secure the outer fiberboard box with packing tape.
7. Ensure that a diamond-shaped UN 3373 label is on exterior of the fiberboard box, when shipping diagnostic specimens.
8. Dry ice is considered a "dangerous good." If using dry ice:
    a. **Use less than 5 lbs of dry ice**.
    b. Mark the blank box and write **"dry ice"** in the Special Instructions section of the air bill.
    c. Attach a diamond-shaped dry ice label on the package with the number **"9"** and **"UN1845"** on it. *This label must include the amount of dry ice used.* Ensure that this is legible and does not overlap any other label on the fiberboard box.
9. Fill out the air bill and place it inside the sleeve and attach to the top of the sealed fiberboard box.

NOTE: If overnight carrier does not make regular pick-ups at your facility, call the carrier and let them know you need a pick-up.

DHL: (800) 225-5345
UPS: (800) 742-5877

CAUTION: MAKE SURE THAT YOUR STYROFOAM BOX IS NOT AIRTIGHT, IF USING DRY ICE!

By following these instructions when shipping diagnostic specimens, your responsibility should be fulfilled.

Shipping Instructions:

Check elsewhere in this section for specific test instructions and information about tube types.
For questions about shipping of specimens, call (512) 458-7111 ext. 2414 or *toll free* (888) 963-7111 ext. 2414.
For shipping containers, call (512) 458-7661 or *toll free* (888) 963-7111 ext. 7661.

Shipping containers for cold shipment are available upon request, call (512) 458-7661 or (888) 963-7111 ext. 7661.

For cholesterol, lipid profile or glucose specimens, prepaid airbills are provided for THSteps specimens only. For all other cholesterol, lipid profile and glucose specimens the provider must pay the shipping costs, using a carrier of their choice.

Flow Chart for Collecting and Shipping Cholesterol, Lipid Profile and Glucose

1. Collect specimens for cholesterol and lipid profile testing in red top tubes
2. Collect specimens for glucose testing in gray top tube containing sodium fluoride/potassium oxalate.

↓

1. 1. Cholesterol and Lipid Profile specimens – centrifuge and separate serum within 2 hours.
2. Glucose specimens – centrifuge and separate plasma within 24 hours from time of collection.

↓

Transfer serum/plasma into plastic transport container.

↓

Place specimen(s) in canisters.
Multiple specimens may be contained inside the canisters.
FREEZE canister(s) containing specimens IMMEDIATELY.

↓

After specimens are frozen:

↓

Batch specimens and ship once or twice a week.
Do not ship on Fridays or the day before federal holidays.

↓

Place up to 4 canisters with frozen specimens in the bottom of the Styrofoam box.

↓

Place and secure ice packs or place dry ice on top of canisters.

↓

Close the Styrofoam box.

↓

Place the Styrofoam box inside the fiberboard box.

↓

Before sealing the fiberboard box, record Time and Date on each G1-B form for each specimen removed from the freezer. Circle "freezer" to indicate specimens were removed from the freezer.

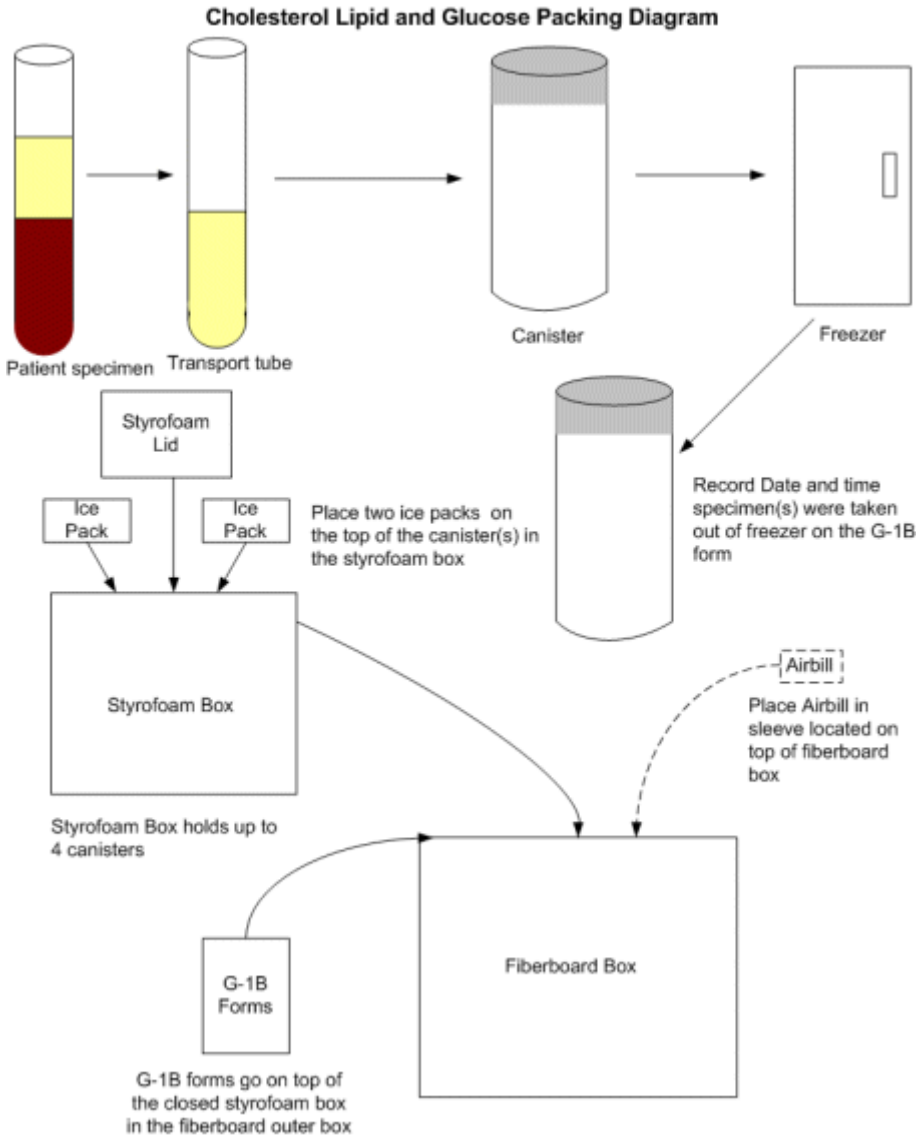
↓

Place requisition forms on top of the Styrofoam box, but inside fiberboard box.
Seal fiberboard box.

↓

Place an air bill inside the shipping sleeve and attach to top of the sealed fiberboard box and ship specimens overnight.

Cholesterol, Lipid, and Glucose Packing Diagram



RhoGAM (HDN) Packing and Shipping Instructions

General Instructions:

1. Submit a G-1B form for each patient with corresponding specimen tube.
2. Retain a copy of the G-1B submission form for your records.
3. Clearly label each specimen with the patient's first and last name as written on the G-1B specimen submission form. Pre-printed patient labels used for specimen identification MUST match the patient's name on the submission form.
4. Specimens must be triple-contained.

Special Requirements:

Required Specimen Type: Collect specimens for RhoGAM (HDN Screening) in a red top tube. DSHS Laboratory must receive specimens within 24 hours from time of collection. Specimens not received at DSHS Laboratory within 24 hours should be stored at 1° - 10°C and shipped cold.

Special Instructions:

1. Ship specimens overnight at ambient temperature.
2. Specimens not received within 24 hours from time of collection must be shipped overnight with enough cold packs to maintain refrigerated temperature until arrival at DSHS Laboratory.
3. Do not freeze.
4. Do NOT ship ANY RhoGAM specimens on Fridays or prior to a federally observed holiday.

Instructions for Shipping Temperature-sensitive Biological Substance, Category B:

To ensure proper packaging, please follow these instructions:

1. Package and ship specimens overnight at ambient temperature.
2. For specimens requiring overnight cold shipment, package with enough ice packs to maintain refrigerated temperature for the duration of the shipment.
3. Record the date and time each specimen was removed from the refrigerator on the G-1B form.
4. Please circle "FRIDGE" on the G-1B form to indicate specimens were removed from the refrigerator.

Shipping Instructions:

For specific test instructions, see the Manual of Reference Services section on Laboratory Tests for Diseases/Agents. See sections above for information about tube types.

For questions about shipping of specimens, call (512) 458-7111 ext. 2414 or *toll free* (888) 963-7111 ext. 2414.

Shipping containers for cold shipment are available upon request, call (512) 458-7661 or *toll free* (888) 963-7111 ext. 7661.

Specimen Receiving, Lab Hours, Holidays

Lab Hours

Business Office Hours
8:00 a.m. - 5:00 p.m.
Monday - Friday
(512) 458-7318
Fax (512) 458-7294

Specimen Acquisition Hours
7:00 a.m. - 5:00 p.m.
Monday - Friday
(512) 458-7598

Specimen Receiving

- We are located at 1100 West 49th Street, Austin, Texas 78756.
- Signs directing you to laboratory specimen receiving are located at the entrances to the DSHS parking area from Grover Street, North Loop, and Sunshine Drive.
- Laboratory Specimen Receiving is located in a seven-story beige brick building. The specimen receiving department is on the north side of building. The entrance is at the far dock designated as "Laboratory Specimen Receiving."
- The laboratory accepts specimens and samples 24 hours a day, 7 days a week.

On holidays, weekends, and after 5 pm during the week, specimens are received by security personnel. The access gate to the lab dock is closed at these times. Locate the callbox on left side of the gate and push the "call" button. Please wait for security to respond. The security guard will open the gate and provide further instructions. If you are unable to reach security with the callbox, please call security at (512) 721-6588 from a cellular phone. You may also contact TBPC Building Manager David Mascorro at (512) 563-9318.

Holiday Schedule for FY 2010			
Holiday	**Agency Status**	**Date**	**Day of Week**
Labor Day	All agencies closed	09-07-09	Monday
Rosh Hashanah	*Optional Holiday*	*09-19-09*	*Saturday*
Rosh Hashanah	*Optional Holiday*	*09-20-09*	*Sunday*
Yom Kippur	*Optional Holiday*	*09-28-09*	*Monday*
Veteran's Day	All agencies closed	11-11-09	Wednesday
Thanksgiving Day	All agencies closed	11-26-09	Thursday
Day after Thanksgiving	All agencies closed	11-27-09	Friday
Christmas Eve Day	All agencies closed	12-24-09	Thursday
Christmas Day	All agencies closed	12-25-09	Friday
Day after Christmas		12-26-09	Saturday
New Year's Day	All agencies closed	01-01-10	Friday
Martin Luther King, Jr. Day	All agencies closed	01-18-10	Monday
Confederate Heroes' Day	Skeleton crew required	01-19-10	Tuesday
Presidents' Day	All agencies closed	02-15-10	Monday
Texas Independence Day	Skeleton crew required	03-02-10	Tuesday
Cesar Chavez Day	*Optional Holiday*	*03-31-10*	*Wednesday*
Good Friday	*Optional Holiday*	*04-02-10*	*Friday*
San Jacinto Day	Skeleton crew required	04-21-10	Wednesday
Memorial Day	All agencies closed	05-31-10	Monday
Emancipation Day		06-19-10	Saturday
Independence Day		07-04-10	Sunday
LBJ's Birthday	Skeleton crew required	08-27-10	Friday

Lab Forms

Order forms for Lab mailing containers and supplies
Phone No. (512) 458-7661
Fax No. (512) 458-7672

Form #	Name of the Form
G-6A	Containers and Forms, Labels and Kits
G-6B	Title V/SDI Container and Order Form
G-399	THSteps/Child Health Laboratory Supplies Form
	Newborn Screening Supplies Order Form
	PKU Monitoring Lab Supplies Order Form
	TB Supplies Order Form
	Genprobe Collectors Order Form
G-19	Water Bacteriology

Test Request Forms - Laboratory Services
Phone No. (512) 458-7578
FAX No. (512) 458-7533

Form #	Name of the Form
F-40A	South Texas Laboratory Chemistry Specimen Submission Form
F-40B	South Texas Laboratory Microbiology Specimen Submission Form
G-1B	Biochemistry and Genetics specimens
G-1C	Maternal Serum Prenatal Triple Screen specimens
G-2A	Serology and Virology specimens
G-2B	Bacteriology and Parasitology specimens
G-9	Laboratory Test for Rabies
G-14	Mosquito Surveillance Adult/Larval (Master)
T-1	Newborn Screening Thyroid specimens

Test Request Forms - by email Email request to: labsubform@dshs.state.tx.us

Please provide required information below when requesting forms by email.

G-2A or G-2B Microbiology Forms	G-1B Biochemistry and Genetics Form & G-1C Maternal Serum Prenatal Triple Screen
Required Information: Submitter Number Submitter National Provider Identification Number (NPI) Provider Name Mailing Address City, State, Zip Phone Number Fax Number Contact person name Physician Name Physician's NPI Number Physician's UPIN Number E-mail address	**Required Information:** Texas Provider Identifier Number (TPI) National Provider Identification Number (NPI) Provider Name Mailing Address City, State, Zip Phone Number Fax Number Contact person name Physician Name Physician's NPI Number Physician's UPIN Number E-mail address

Fee Schedule

These prices will be in effect starting September 1, 2007. Prices subject to change without notice.

Obtaining DSHS Lab Service:

Setting up an account:
If you don't already have an account or submitter number with the DSHS Lab, call our Reporting Department at (512) 458-7318 ext 2377. You will be assigned a submitter number to use when ordering test request forms and kits.

Ordering test request forms and kits:
To order test request forms, call our Reporting Department at (512) 458-7318 ext 2377. To order supplies and kits call the Container Prep Department at (512) 458-7661. Please be prepared to provide your assigned submitter number. Newborn Screening Kits can only be ordered in writing; please fax your order form to (512) 458-7672. Please allow a minimum of one week for delivery of supplies from date order received by DSHS. If you have not received your order in two weeks please contact (512) 458-7661 to verify that the order form was received. Operators are available by telephone Monday through Friday (7:30 a.m. to 4:30 p.m.) or a message can be left at any time, please include your city with any message. Supplies are mailed out Monday-Friday. For emergency overnight orders, your written request must be received by 2 p.m. the day the shipment needs to go out; the form must be *completely* filled out including your courier account number so that the shipping costs are billed directly to you from the courier. Please also call no later than 2 p.m. to ensure that the order was received. The DSHS Lab is closed on the following holidays:

- New Year's Day
- Martin Luther King Jr. Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Christmas Eve Day
- Christmas Day

Billing Information
Tests are billed monthly to the physician's office, hospital, clinic or institution whose account number appears on the test request form accompanying the specimen. When Medicaid, Medicare, Insurance, or any other Third Party information is included on the test request form, these will be billed prior to the submitter for payment. Full payment is due 30 days from date of invoice for all lab services.
Full payment is due 120 days from date of invoice for Newborn Screening Kits.

Questions about billing may be addressed to:
Department of State Health Services
Revenue Management Unit- Billing Department
1100 West 49th St.
Austin, Texas 78756
(512) 458-7317

CLIA ID #:
45D0660644 - Bureau of Laboratories
Tax ID # 32-0113643

2007 DSHS FEE SCHEDULE - Austin Lab

Procedure No.	*Procedure Name*	*CPT*	*Cost*
	Biochemistry		
	Human		
	Clinical Chemistry		
	Blood typing: ABO typing		
BZZ0009A	BLOOD TYPING, ABO	86900	$9.00
	Blood typing: Antibody screen (blood type)		
BZZ0010A	ANTIBODY SCREEN	86850	$25.00
	Blood typing: Antigen titer		
BZZ0012A	INDIRECT, TITER, EACH ANTISERUM	86886	$13.00
	Blood typing: Antigen type (blood type)		
BZZ0011A	ANTIBODY IDENTIFICATION, RBC ANTIBODIES, EACH PANEL	86870	$13.00
	Blood typing: Antigen Type (other than ABO & Rh type)		
BZZ0027A	RBC ANTIGENS, OTHER THAN ABO OR RH (D) EACH	86905	$13.00
	Blood typing: Rh typing		
BZZ0013A	RH TYPING	86901	$13.00
	Cholesterol:		
BZZ0026A	HDL	83718	$2.29
	Cholesterol: Cholesterol only		
BZZ0015A	TOTAL CHOLESTEROL	82465	$6.00
	Glucose:		
BZZ0106A	GLUCOSE, FASTING	82947	$6.80
BZZ0107A	GLUCOSE, RANDOM	82947	$6.80
	Glucose: Glucose tolerance test, 1 hour		
BZZ0018A	GLUCOSE TOLERANCE - 1 HR	82947	$14.00
	Glucose: Glucose tolerance test, 2 hour		
BZZ0019A	GLUCOSE TOLERANCE - 2 HR	82947	$17.00
	Glucose: Glucose tolerance test, 3 hour		
BZZ0020A	GLUCOSE TOLERANCE - 3 HR	82947	$19.00
	Glucose: Glucose, 1 hour		
BZZ0017A	GLUCOSE - 1 HOUR	82947	$6.80
	Glucose: Glucose, postprandial, 0 and 2 hours		
BZZ0016A	GLUCOSE POST PRANDIAL (0 AND 2 HR)	82947	$14.00
	Hemoglobin, total		
BZZ0024A	HEMOGLOBIN	85018	$4.50
	Hemoglobinopathy		
BZZ0008A	HEMOGLOBIN ELECTROPHORESIS	83020	$7.50
	Lead screen		
BZZ0023A	LEAD	83655	$7.00
	Lipid profile, includes cholesterol; triglycerides; HDL; and low-density lipoprotein (LDL)		
BZZ0022A	LIPID PANEL	80061	$28.00
	RPR (rapid plasma reagent test)		
BZZ0021A	SYPHILIS (RPR)	86592	$5.15
	Maternal Serum Triple Screen Panel		
	A NOTE: The three biochemical tests (AFP, hCG, and uE3) are not available as individual tests or separate components.		
	Alpha fetoprotein (AFP)		
BZZ0096A	ALPHA-FETOPROTEIN, SERUM	82105	$15.00
	ß-human chorionic gonadotropin (ß-HCG)		
BZZ0097A	GONADOTROPIN, CHORIONIC (HCG); QUANTITATIVE	84702	$15.00
	Unconjugated estriol-3 (UE3)		
BZZ0098A	ESTRIOL	82677	$15.00

2007 DSHS FEE SCHEDULE - Austin Lab

Procedure No.	Procedure Name	CPT	Cost
x			
	TOTAL: TRIPLE SCREEN PANEL		$45.00

NBS

Newborn screening test kit, including screening panel

500001	MEDICAID/CHARITY KITS		$0.00
500002	PREPAID KITS		$29.50
500003	REPROCESSING FEE		$50.00

Phenylalanine/Tyrosine

BZZ0003A	PHENYLALANINE/TYROSINE	83789	$24.00

NBS: DNA Analysis

Galactosemia

BAE0061A	INTERPRETATION AND REPORT-GAL	83912	$5.60
BAE0057A	MOLECULAR ISOLATION OR EXTRACTION-GAL	83890	$5.60
BAE0058A	PCR, MULTIPLEX, EACH-GAL (X5)	83900	$28.44
BAE0059A	SEPARATION BY GEL ELECTROPHORESIS-GAL (X5)	83894	$5.60
	TOTAL: GALACTOSEMIA		$181.40

Galactosemia, DNA carrier analysis of family member

BAE0061A	INTERPRETATION AND REPORT-GAL	83912	$5.60
BAE0057A	MOLECULAR ISOLATION OR EXTRACTION-GAL	83890	$5.60
BAE0058A	PCR, MULTIPLEX, EACH-GAL (X2)	83900	$28.44
BAE0059A	SEPARATION BY GEL ELECTROPHORESIS-GAL (X2)	83894	$5.60
	TOTAL: GALACTOSEMIA CARRIER		$79.28

Hemoglobin DNA test

BAG0079A	ENZYMATIC DIGESTION-HEMO (X1-8, DEPENDENT ON MUTATIONS)	83892	$5.60
BAG0077A	INTERPRETATION AND REPORT-HEMO	83912	$5.60
BAP0122A	INTERPRETATION AND REPORT-SEQUENCING (X0-1, DEPENDENT ON MUTATIONS)	83912	$5.60
BAG0073A	MOLECULAR ISOLATION OR EXTRACTION-HEMO (X1-5, DEPENDENT ON MUTATIONS)	83890	$5.60
BAP0124A	MUTATION IDENTIFICATION BY SEQUENCING, EACH SEGMENT (X0-2, DEPENDENT ON MUTATIONS)	83904	$14.22
BAG0074A	PCR, SINGLE PRIMER PAIR, EACH-HEMO (X1-5, DEPENDENT ON MUTATIONS)	83898	$14.22
BAG0075A	SEPARATION BY GEL ELECTROPHORESIS-HEMO (X1-10, DEPENDENT ON MUTATIONS)	83894	$5.60
	TOTAL: HEMOGLOBIN (VARIES FROM $42.22 - $239.54)		$239.54

Phenylketonuria

BAA0031A	INTERPRETATION AND REPORT-PKU	83912	$5.60
BAA0032A	ISOLATION OR EXTRACTION OF HIGHLY PURIFIED NUCLEIC ACID-PKU (X13)	83891	$5.60
BAA0027A	MOLECULAR ISOLATION OR EXTRACTION-PKU (X13)	83890	$5.60
BAA0030A	MUTATION IDENTIFICATION BY SEQUENCING, EACH SEGMENT-PKU (X13)	83904	$14.22
BAA0028A	PCR, SINGLE PRIMER PAIR, EACH-PKU (X13)	83898	$14.22
BAA0029A	SEPARATION BY GEL ELECTROPHORESIS-PKU (X13)	83894	$5.60
	TOTAL: PHENYLKETONURIA		$593.72

Phenylketonuria, DNA carrier analysis of family member

BAB0039A	INTERPRETATION AND REPORT-PKU CARRIER	83912	$5.60
BAB0040A	ISOLATION OR EXTRACTION OF HIGHLY PURIFIED NUCLEIC ACID-PKU CARRIER (X4)	83891	$5.60
BAB0035A	MOLECULAR ISOLATION OR EXTRACTION-PKU CARRIER (X4)	83890	$5.60
BAB0038A	MUTATION IDENTIFICATION BY SEQUENCING, EACH SEGMENT-PKU CARRIER (X4)	83904	$14.22
BAB0036A	PCR, SINGLE PRIMER PAIR, EACH-PKU CARRIER (X4)	83898	$14.22
BAB0037A	SEPARATION BY GEL ELECTROPHORESIS-PKU CARRIER (X4)	83894	$5.60
	TOTAL: PHENYLKETONURIA CARRIER		$186.56

Environmental Chemistry

Non-human

Additional charges: A fee equal to 3% of the analysis fee will be charged for a summary of the quality control data routinely generated during the analysis. This summary may include data for method blanks, duplicate, matrix spike recovery, laboratory control samples, and surrogate recovery.

Additional charges: A fee of $8 per sample will be charged for samples submitted but not analyzed at the submitters request, including samples on hold, and then voided.

2007 DSHS FEE SCHEDULE - Austin Lab

Procedure No.	Procedure Name	CPT	Cost

Additional charges: Additional copies of reports and raw data packages will be provided at a cost of $0.10 per page for each request in excess of 50 pages. An additional fee of $15 will be charged for each hour in excess of one hour to prepare the request.

Additional charges: Analysis of trip and field blank samples will be billed at the same rate as the requested sample analysis.

Additional charges: If the submitter requires specific samples within their batch to be analyzed and reported as laboratory fortified matrix (FM) or matrix spike (MS), and laboratory fortified matrix duplicate (LFMD) or matrix spike duplicate (MSD), a fee for two additional samples will be charged.

Additional charges: The preparation fee (or 20% of the analysis fee if there is no separate preparation fee) will be charged for any sample prepared but not analyzed at the clients request.

Analysis of Organic Compounds in Air: Organic Analysis

Formaldehyde, National Institute Of Occupational Safety and Health (NIOSH) methods		
EZZ0092A	FORMALDEHYDE, AIR, NIOSH 3500	$118.00
Pesticides, NIOSH method		
EZZ0090A	INSECTICIDES, CHROMOSORB, AIR, NIOSH 5510	$145.00
VOCs, NIOSH method		
EZZ0076A	VOLATILES, CHARCOAL TUBE, AIR, NIOSH 1500	$135.00

Drinking water (including bottled water) samples: Inorganic Analysis

Alkalinity, total and phenolphthalein, Standard Methods (SM), 18th edition, 2320B		
EZZ0206A	ALKALINITY, TOTAL AND PHENOLPHTHALEIN	$23.00
Ammonia, SM, 20th edition, 4500-NH3G		
EZZ0214A	AMMONIA	$35.00
Bromate, Environmental Protection Agency (EPA) method 300.1		
EZZ0005A	BROMATE	$69.00
Bromide, EPA method 300.0		
EZZ0006A	BROMIDE	$25.00
Carbon, total organic, SM, 18th edition, 5310C		
EZZ0068A	CARBON, TOTAL ORGANIC, WATER	$43.00
Chloramines, SM, 19th edition, 4500-ClO2 D		
EZZ0024A	CHLORAMINES	$20.00
Chlorate, EPA method 300.0		
EZZ0010A	CHLORATE	$55.00
Chloride, EPA method 300.0		
EZZ0007A	CHLORIDE	$21.00
Chlorine dioxide, SM, 19th edition, 4500-ClO2 B		
EZZ0008A	CHLORINE DIOXIDE	$80.00
Chlorine, SM, 19th edition, 4500-Cl F		
EZZ0025A	CHLORINE	$20.00
Chlorite, EPA method 300.0		
EZZ0009A	CHLORITE	$55.00
Color, SM, 18th edition, 2120B		
EZZ0011A	COLOR	$24.00
Conductivity, SM, 18th edition, 2510B		
EZZ0012A	CONDUCTANCE	$19.00
Cyanide, total, Quick Chem 10-204-00-1-X		
EZZ0031A	CYANIDE, TOTAL	$55.00
Fluoride, EPA method 300.0		
EZZ0013A	FLUORIDE	$21.00

2007 DSHS FEE SCHEDULE - Austin Lab

Procedure No.	Procedure Name	CPT	Cost
Nitrate and nitrite as nitrogen, EPA method 353.2			
EZZ0047A	NITRATE + NITRITE (AS N)		$25.00
Nitrate as nitrogen, EPA method 353.2			
EZZ0048A	NITRATE, N (NO3-N)		$25.00
Nitrite as nitrogen, EPA method 353.2			
EZZ0049A	NITRITE, N (NO2-N)		$25.00
Odor, SM 2150B			
EZZ0050A	ODOR		$50.00
Perchlorate, EPA method 314.0			
EZZ0023A	PERCHLORATE, EPA		$55.00
Perchlorate, Unregulated Contamination Monitoring Regulation (UCMR), EPA method 314.0			
EZZ0022A	PERCHLORATE, UCMR		$61.00
pH, SM 4500-H-B			
EZZ0017A	PH, WATER		$17.00
Phenolics, total recoverable, EPA method 420.1			
EZZ0052A	PHENOLICS, TOTAL RECOVERABLE		$48.00
Routine water mineral group, EPA methods 150.1, 300.0, and 353.2, and SM, 18th edition, 2320B, 2510B, and 2540C			
EZZ0016A	ROUTINE WATER MINERAL GROUP		$155.00
Silica, dissolved, SM, 18th edition, 4500Si F			
EZZ0018A	SILICA, DISSOLVED		$24.00
Solids, total dissolved, determined, SM, 18th edition, 2540C			
EZZ0059A	SOLIDS, TOTAL DISSOLVED, DETERM.		$31.00
Sulfate, EPA method 300.0			
EZZ0020A	SULFATE		$21.00
Turbidity, EPA method 180.1			
EZZ0021A	TURBIDITY		$20.00

Drinking water (including bottled water) samples: Metals Analysis

A NOTE: A preparation fee applies to all drinking water samples analyzed by inductively coupled plasma (ICP) or by inductively coupled plasma-mass spectrometry (ICP-MS) with turbidity greater than or equal to 1 Nephelometric Turbidity Unit (NTU) or that contains visible particles. The total analysis cost includes the per-element or per-group fee and any D640 required sample preparation fee.

All metals drinking water group, EPA methods, 200.7, 200.8, and 245.1 and SM 19th edition 2340B			
EZZ0191A	ALL METALS / DRINKING WATER		$264.00
Hardness, SM, 19th edition 2340B			
EZZ0015A	HARDNESS		$38.00
ICP/ICP-MS metals drinking water group, EPA methods 200.7 and 200.8 and SM 19th edition 2340B			
EZZ0192A	ICP / ICP-MS METALS GROUP / DRINKING WATER		$165.00
Lead/copper, EPA method 200.8			
EZZ0190A	LEAD & COPPER / DRINKING WATER		$30.00
Mercury, EPA method 245.1			
EZZ0194A	MERCURY / DRINKING WATER		$25.00
Reagent water metal suitability group, EPA methods 200.7 and 200.8			
EZZ0215A	REAGENT WATER METAL SUITABILITY GROUP		$115.00
Sample preparation fee, total recoverable metals digestion, EPA method 200.2			
EZZ0174A	TOTAL RECOVERABLE METALS DIGESTION, DRINKING WATER		$25.00
Single ICP, EPA method 200.7			
EZZ0195A	SINGLE ICP / DRINKING WATER		$19.00
Single ICP-MS, EPA method 200.8			
EZZ0205A	SINGLE ICP-MS / DRINKING WATER		$25.00

2007 DSHS FEE SCHEDULE - Austin Lab

Procedure No.	Procedure Name	CPT	Cost
Drinking water (including bottled water) samples: Organic Analysis			
Chlorinated pesticides and PCBs in drinking water, EPA method 508			
EZZ0091A	CHLORINATED PESTICIDES AND PCBS, DW, EPA 508		$184.00
Chlorophenoxy herbicides, EPA method 515.4--			
EZZ0079A	CHLOROPHENOXY HERBICIDES, DW, SOC 4, EPA 515.4		$220.00
Diquat and paraquat EPA method 549			
EZZ0094A	DIQUAT AND PARAQUAT, DW, EPA 549.2		$242.00
Endothall, EPA method 548.1			
EZZ0070A	ENDOTHALL, DW, EPA 548.1		$357.00
Ethylene dibromide (EDB) and dibromochloropropane (DBCP), EPA method 504.1			
EZZ0080A	EDB & DBCP, DW, EPA 504.1		$156.00
Glyphosate, EPA method 547			
EZZ0199A	GLYPHOSATE, DW, EPA 547		$169.00
Haloacetic acids and dalapon, EPA method 552.2 or 552.3			
EZZ0088A	HALOACETIC ACIDS, DW, EPA 552.2		$230.00
Methylcarbamoyloximes and n-methylcarbamates (carbamate) pesticides, EPA method 531.1			
EZZ0093A	CARBAMATES INSECTICIDES, DW, SOC 4, EPA 531.1		$200.00
Organochlorine pesticides, EPA method 508			
EZZ0091A	CHLORINATED PESTICIDES AND PCBS, DW, EPA 508		$184.00
PCB screening by perchlorination, EPA method 508A			
EZZ0082A	PCB, DW, SOC 6, EPA 508A		$293.00
PHA & Phthalates, DW, SOC 5, EPA 525.2			
EZZ0072A	PHA & PHTHALATES, DW, SOC 5, EPA 525.2		$300.00
Semi-volatile organic compounds, EPA method 525.2			
EZZ0075A	SEMI-VOLATILE ORGANIC COMPOUNDS, DRINKING WATER		$300.00
Trihalomethanes, EPA method 502.2			
EZZ0083A	TRIHALOMETHANES, DW, EPA 502.2		$84.00
Trihalomethanes, EPA method 524.2			
EZZ0084A	TRIHALOMETHANES, DW, EPA 524.2		$84.00
VOCs, EPA method 524.2			
EZZ0085A	VOCS, EPA METHOD		$183.00
Drinking water (including bottled water) samples: Radiochemical Analysis			
Gamma emitting isotopes, EPA method 901.1			
EZZ0142A	GAMMA EMITTING ISOTOPES, DRINKING WATER		$75.00
Gross alpha and beta, EPA method 900.0			
EZZ0143A	GROSS ALPHA AND BETA, DRINKING WATER		$100.00
Radium-226, SM 7500-RaC			
EZZ0146A	RADIUM-226, DRINKING WATER		$76.00
Radium-228, SM 7500-RaD			
EZZ0147A	RADIUM-228, DRINKING WATER		$104.00
Tritium, EPA method 906.0			
EZZ0148A	TRITIUM, DRINKING WATER		$51.00
Uranium isotopes, DOE-RESL A-20 Alpha Spectrometry			
EZZ0141A	URANIUM ISOTOPES, DRINKING WATER		$86.00
Food and food products: Inorganic Analysis			
Added water, AOAC calculation			
EZZ0027A	ADDED WATER		$13.00
Deterioration, canned products, AOAC chart			
EZZ0032A	DETERIORATION, CANNED PRODUCTS		$24.00
Fat, paly screen, AOAC method 46.616			
EZZ0034A	FAT, PALY SCREEN		$35.00

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Procedure No.	Procedure Name	CPT	Cost
Fat, soxhlet extraction, USDA method Fat-1			
EZZ0035A	FAT, SOXHLET EXTRACTION		$81.00
Filth, AOAC method 941.16			
EZZ0036A	FILTH		$35.00
Insect identification, Food and Drug Administration (FDA) Technical Bulletin #2			
EZZ0043A	INSECT ID		$35.00
Meat protein, AOAC calculation			
EZZ0045A	MEAT PROTEIN		$15.00
Moisture (total water), USDA M01 method			
EZZ0046A	MOISTURE (TOTAL WATER)		$17.00
pH of food products, AOAC method 981.12			
EZZ0051A	PH OF FOOD PRODUCTS		$20.00
Protein, total, USDA protein block digestion			
EZZ0054A	PROTEIN, TOTAL		$58.00
Salt, USDA method SLT			
EZZ0057A	SALT		$105.00
Water activity, AOAC method 978.18			
EZZ0066A	WATER ACTIVITY		$35.00

Food and food products: Metals Analysis

A NOTE: A sample preparation fee applies to all food samples analyzed by FLAA, GFAA, GHAA, ICP or ICP-MS techniques. The total analysis fee includes the sample preparation fee and the per-element fee. The fee for analysis of multiple metals by a single method includes a single sample preparation fee and the appropriate per-element fees.

Mercury, EPA methods 245.1, 245.5, and 245.6, and SW-846 methods 7470A and 7471A			
EZZ0219A	MERCURY, FOOD		$32.00
Sample preparation fee--total recoverable metals digestion, EPA methods 200.2, 200.3, or SW-846 method 3050B			
EZZ0220A	TOTAL RECOVERABLE METALS DIGESTION, FOOD		$30.00
Single metal, FLAA or ICP, EPA 200 series methods and EPA SW-846 methods 6010 or 7000 series			
EZZ0217A	SINGLE METAL REQUEST (ICP), FOOD		$21.00
Single metal, GFAA or GHAA, EPA 200 series methods and EPA SW 846 methods 7000 series, and SM, 18th edition, 3114			
EZZ0216A	SINGLE METAL REQUEST (GFAA, GHAA), FOOD		$30.00
Single metal, ICP-MS, EPA method 200.8, EPA SW-846 method 6020			
EZZ0218A	SINGLE METAL REQUEST (ICP-MS), FOOD		$25.00

Identification of feces and urine stains: Inorganic Anlaysis

Identification of feces stains, AOAC method 981.22			
EZZ0097A	ID OF FECES STAINS		$127.00
Identification of urine stains, AOAC methods 963.28, and 959.14			
EZZ0064A	URINE STAIN ID		$35.00

Soil and solids: Radiochemistry

Alpha spectrometry preparation, DOE-RESL A-20 Pyrosulfate Fusion			
EZZ0099A	ALPHA SPEC PREP, SOIL		$123.00
Gamma emitting isotopes, Ga-01-R			
EZZ0101A	GAMMA EMITTING ISOTOPES, SOIL		$112.00
Gross alpha and beta, EPA method 9310			
EZZ0102A	GROSS ALPHA AND BETA, SOIL		$81.00
Gross alpha or beta, EPA method 9310			
EZZ0103A	GROSS ALPHA OR BETA, SOIL		$65.00
Plutonium isotopes, DOE-RESL A-20 Alpha Spectrometry			
EZZ0104A	PLUTONIUM, SOIL		$72.00

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Procedure No.	Procedure Name	CPT	Cost
Radium-226, DOE-RESL A-20/EPA method 903.1			
EZZ0105A	RADIUM-226, SOIL		$109.00
Radium-228, DOE-RESL A-20/EPA method 904.0			
EZZ0106A	RADIUM-228, SOIL		$88.00
Strontium-89 or 90, DOE-RESL Chem TP-Sr1			
EZZ0107A	STRONTIUM-89 OR 90, SOIL		$118.00
Thorium isotopes, DOE-RESL A-20 Alpha Spectrometry			
EZZ0108A	THORIUM ISOTOPES, SOIL		$70.00
Tritium, EPA method-520/5-84-006			
EZZ0109A	TRITIUM, SOIL		$79.00
Uranium isotopes, DOE-RESL A-20 Alpha Spectrometry			
EZZ0110A	URANIUM ISOTOPES, SOIL		$68.00

Soil and solids: Metals Analysis

A NOTE: Sample preparation fee applies to the analysis of all solid (soil, sediment, etc.) samples. The total cost of the analysis will be the sample preparation fee plus the per-element fee. The fee for analysis of multiple metals by a single method includes a single sample preparation fee and the appropriate per-element fee.

Lead and cadmium in pottery leachate by FLAA			
EZZ0197A	LEAD AND CADMIUM IN POTTERY LEACHATE		$47.00
Lead in paint by FLAA			
EZZ0186A	LEAD, PAINT		$35.00
Lead in pottery leachate by FLAA			
EZZ0203A	LEAD, POTTERY LEACHATE		$26.00
Lead in soil by FLAA			
EZZ0207A	LEAD, SOIL		$37.00
Lead in solids by FLAA			
EZZ0187A	LEAD, SOLID		$35.00
Mercury, sediment, EPA method 245.5 and EPA SW-846 method 7471A			
EZZ0162A	MERCURY, SEDIMENT		$32.00
Sample preparation fee--acid digestion of sediments, sludges, and soils, EPA SW-846 Method 3050B			
EZZ0164A	TOTAL RECOVERABLE METALS DIGESTION, SOIL / SOLIDS		$25.00
Single metal, FLAA or ICP, EPA 200 series methods, 200.7, and EPA SW-846 6010B and 7000 series methods			
EZZ0168A	SINGLE METAL REQUEST (FAAS, ICP), SOLID / SOIL		$21.00
Single metal, graphite furnace atomic absorption spectrometry (GFAA) or gas hydride atomic absorption spectrometry (GHAA), EPA 200 series methods and EPA SW-846 methods 7000 series, 7062, and 7742, and SM, 18th edition, 3114			
EZZ0166A	SINGLE METAL REQUEST (GFAA, GHAA), SOLID / SOIL		$30.00
Single metal, ICP-MS, EPA method 200.8 and EPA SW-846 method 6020			
EZZ0167A	SINGLE METAL REQUEST (ICP-MS), SOLID / SOIL		$25.00

Tissue and vegetation samples:

A NOTE: A tissue preparation (homogenization) fee applies to all seafood tissue samples analyzed for organic compounds and/or metals. The total analysis cost includes the tissue preparation fee, any analyte specific sample preparation fee, and the per-element or per-group test fee.

Tissue preparation fees: Fillets, EPA method 200.3			
EZZ0172A	TISSUE PREPARATION, FILLETS, TISSUE		$37.00
Tissue preparation fees: Whole fish and crabs, EPA method 200.3			
EZZ0173A	TISSUE PREPARATION, WHOLE FISH AND CRABS, TISSUE		$64.00

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Procedure No.	Procedure Name	CPT	Cost

Tissue and vegetation samples: Metals Analysis

A NOTE: A sample preparation fee applies to all tissue samples analyzed by ICP or ICP-MS. The total analysis cost includes the per-element or per-group fee plus any required sample preparation fee.

	Fish tissue (includes per group fee and total recoverable metals digestion fee)		
EZZ0180A	METALS FISH TISSUE PANEL		$189.00
	Per-element fees: Mercury, EPA method 245.6		
EZZ0169A	MERCURY, TISSUE		$32.00
	Per-element fees: Single metal, FLAA or ICP, EPA 200 series methods, 200.7, or EPA SW-846 methods 6010B, or 7000's		
EZZ0171A	SINGLE METAL REQUEST (FAAS, ICP), TISSUE		$19.00
	Per-element fees: Single metal, GFAA or GHAA, EPA 200 series, methods and EPA SW-846 methods 7000 series, 7062, and 7742, and SM, 18th edition, 3114		
EZZ0170A	SINGLE METAL REQUEST (GFAA, GHAA), TISSUE		$30.00
	Per-element fees: Single metal, ICP-MS, EPA method 200.8, and EPA SW-846 method 6020		
EZZ0185A	SINGLE METAL REQUEST (ICP-MS), TISSUE		$25.00
	Sample preparation fee--total recoverable metals digestion, EPA method 200.3		
EZZ0189A	TOTAL RECOVERABLE METALS DIGESTION, TISSUE		$25.00

Tissue and vegetation samples: Organic Analysis

A NOTE: The organic analysis fee includes any required sample cleanup procedures.

	Organochlorine pesticides and PCB's, fish fillets, PAM 304 E1 and EPA SW-846 methods 8081A		
EZZ0086A	ORGANOCHLORINE PESTICIDES AND PCBS, FISH FILLETS, PAM 304 E1		$812.00
	Organochlorine pesticides and PCB's, whole fish, PAM 304 E1 and EPA SW-846 methods 8081A-		
EZZ0087A	ORGANOCHLORINE PESTICIDES AND PCBS, WHOLE FISH, PAM 304 E1		$965.00
	Organochlorine pesticides in vegetables by Gas Chromatography (GC)		
EZZ0081A	ORGANOCHLORINE PESTICIDES IN VEGETABLES, PAM 302 E1		$604.00
	Semi-volatile organic compounds by gas chromatography/mass spectrometry (GC/MS), fish, JAOAC method and EPA SW-846 methods 3540C and 8270C		
EZZ0073A	SEMI-VOLATILES GC/MS, FISH, EPA 8270C		$518.00
	VOCs, GC/MS, fish, JAOAC method 64;653:ff and EPA SW-846 method 8260B		
EZZ0074A	VOLATILES, GC/MS, FISH, JAOAC		$249.00

Tissue and vegetation samples: Radiochemical Analysis

	Alpha spectrometry preparation, DOE-RESL A-20 Pyrosulfate Fusion		
EZZ0111A	ALPHA SPEC PREP, VEGETATION / TISSUE		$123.00
	Gamma emitting isotopes, EPA method 901.1		
EZZ0112A	GAMMA EMITTING ISOTOPES, VEGETATION / TISSUE		$110.00
	Gross alpha and beta, SM 7110B		
EZZ0113A	GROSS ALPHA AND BETA, VEGETATION / TISSUE		$89.00
	Gross alpha or beta, SM 7110B		
EZZ0114A	GROSS ALPHA OR BETA, VEGETATION / TISSUE		$65.00
	Plutonium isotopes, DOE-RESL A-20 Alpha Spectrometry		
EZZ0115A	PLUTONIUM, VEGETATION / TISSUE		$65.00
	Radium-226, DOE-RESL A-20/SM 7500 Ra-C		
EZZ0116A	RADIUM-226, VEGETATION / TISSUE		$109.00
	Strontium-89 or 90, EPA method 905.0		
EZZ0118A	STRONTIUM-89 OR 90, VEGETATION / TISSUE		$119.00
	Thorium isotopes, DOE-RESL A-20 Alpha Spectrometry		
EZZ0119A	THORIUM ISOTOPES, VEGETATION / TISSUE		$70.00
	Tritium, EPA Method 520/5-84-006		
EZZ0120A	TRITIUM, VEGETATION / TISSUE		$79.00
	Uranium isotopes, DOE-RESL A-20 Alpha Spectrometry		
EZZ0121A	URANIUM ISOTOPES, VEGETATION / TISSUE		$68.00

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Procedure No.	Procedure Name	CPT	Cost
Water and wastewater: Inorganic Analysis			
Odor, EPA method 140.1			
EZZ0050A	ODOR		$50.00
Phenolics, total recoverable, EPA method 420.1			
EZZ0052A	PHENOLICS, TOTAL RECOVERABLE		$48.00
Water and wastewater: Metals Analysis			
A NOTE: A sample preparation fees apply to the analysis of water and/or wastewater samples. The total cost of the analysis will be the required sample preparation fee plus the per-element fee. The fee for analysis of multiple metals by a single method includes a single sample preparation fee and the appropriate per-element fees.			
Per-element fees: Mercury, EPA method 245.1 and EPA SW-846 method 7470A			
EZZ0160A	MERCURY, WATER / WASTEWATER		$32.00
Per-element fees: Single metal, FLAA or ICP, EPA method 200.8, 200.7 and EPA SW-846 methods 6010B, and 7000 series			
EZZ0177A	SINGLE METAL (FAAS, ICP), WATER / WASTEWATER		$19.00
Per-element fees: Single metal, GFAA or GHAA, EPA method 200 series and EPA SW-846 methods 7000 series, 7062, and 7742, and SM, 18th edition, 3114			
EZZ0178A	SINGLE METAL (GFAA, GHAA), WATER / WASTEWATER		$30.00
Per-element fees: Single metal, ICP-MS, EPA method 200.8, and EPA SW-846 method 6020			
EZZ0179A	SINGLE METAL (ICP-MS), WATER / WASTEWATER		$25.00
Sample preparation fees: Filtration (dissolved metals), EPA SW-846 method 3005A.			
EZZ0175A	FILTRATION, WATER / WASTEWATER		$21.00
Sample preparation fees: Total recoverable metals digestion, EPA method 200.2 and EPA SW-846 methods 3005A, 3010A, and 3020A			
EZZ0204A	TOTAL RECOVERABLE METALS DIGESTION, WATER / WASTEWATER		$30.00
Water and wastewater: Radiochemical Analysis			
Alpha spectrometry preparation, DOE-RESL A-20 Pyrosulfate Fusion			
EZZ0122A	ALPHA SPEC PREP, WATER		$132.00
Gamma emitting isotopes, Ga-01-R			
EZZ0124A	GAMMA EMITTING ISOTOPES, WATER		$75.00
Gross alpha and beta, EPA method 900.0			
EZZ0151A	GROSS ALPHA AND BETA, WATER		$90.00
Gross alpha or beta, EPA method 900.0			
EZZ0125A	GROSS ALPHA OR BETA, WATER		$80.00
Plutonium isotopes, DOE-RESL A-20 Alpha Spectrometry			
EZZ0126A	PLUTONIUM, WATER		$72.00
Radium-226, SM 7500 RaC			
EZZ0152A	RADIUM-226, WATER		$81.00
Radium-228, SM 7500 RaD			
EZZ0153A	RADIUM-228, WATER		$68.00
Strontium-89 or 90, DOE-RESL Chem TP-Sr1			
EZZ0155A	STRONTIUM-89 OR 90, WATER		$101.00
Thorium isotopes, DOE-RESL A-20 Alpha Spectrometry			
EZZ0127A	THORIUM ISOTOPES, WATER		$70.00
Tritium, EPA method EERF 520-5-84-006			
EZZ0128A	TRITIUM, WATER		$51.00
Uranium isotopes, DOE-RESL A-20 Alpha Spectrometry			
EZZ0096A	URANIUM ISOTOPES, WATER		$76.00
Wipes/filters/cartridges: Metals Analysis			
Lead analysis, FLAA			
EZZ0188A	LEAD, WIPE		$32.00

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Procedure No.	Procedure Name	CPT	Cost

Wipes/filters/cartridges: Radiochemistry

Alpha spectrometry preparation, DOE-RESL A-20 Pyrosulfate Fusion			
EZZ0129A	ALPHA SPEC PREP, WIPE / FILTER / CARTRIDGE		$123.00
Carbon-14, Liquid Scintillation			
EZZ0130A	CARBON-14, WIPE / FILTER / CARTRIDGE		$116.00
Gamma emitting isotopes, Ga-01-R			
EZZ0131A	GAMMA EMITTING ISOTOPES, WIPE / FILTER / CARTRIDGE		$64.00
Gross alpha and beta, EPA method 900.0			
EZZ0132A	GROSS ALPHA AND BETA, WIPE / FILTER / CARTRIDGE		$52.00
Gross alpha or beta, EPA method 900.0			
EZZ0133A	GROSS ALPHA OR BETA, WIPE / FILTER / CARTRIDGE		$40.00
Plutonium isotopes, DOE-RESL TPA 20			
EZZ0134A	PLUTONIUM, WIPE / FILTER / CARTRIDGE		$72.00
Radium-226, DOE-RESL A-20/EPA method 903.1			
EZZ0135A	RADIUM-226, WIPE / FILTER / CARTRIDGE		$109.00
Strontium-89 or 90 DOE-RESL Chem TR-Sr1			
EZZ0137A	STRONTIUM-89 OR 90, WIPE / FILTER / CARTRIDGE		$118.00
Thorium isotopes, DOE-RESL TPA			
EZZ0138A	THORIUM ISOTOPES, WIPE / FILTER / CARTRIDGE		$70.00
Tritium, EPA EERF 520-5-84-006			
EZZ0139A	TRITIUM, WIPE / FILTER / CARTRIDGE		$51.00
Uranium isotopes, DOE-RESL TPA			
EZZ0140A	URANIUM ISOTOPES, WIPE / FILTER / CARTRIDGE		$68.00

Microbiology

Human

NOTE: MICROBIOLOGY CULTURE SERVICES WILL BE CHARGED BASED UPON THE ACTUAL TESTING PERFORMED DETERMINED BY SUSPECT ORGANISMS, SPECIMEN TYPE, AND CLINICAL HISTORY PROVIDED.

Bacteriology

Aerobic isolation, comprehensive			
MAA0039A	AEROBIC BACTERIA, SUSCEPTIBILITY TESTING	87181	$45.00
MAA0007A	BACTERIAL ID, GAS LIQUID CHROMATOGRAPHY	87143	$35.00
MAA0009A	BRUCELLA, CULTURE CONFIRM., SEROLOGICAL	87147	$15.00
MAA0025A	CULTURE, ALL AEROBES	87070	$119.00
MAA0016A	CULTURE, BLOOD, ALL AEROBES	87040	$119.00
MZZ0444A	CULTURE, FRANCISELLA	87077	$70.00
MAA0022A	CULTURE, LEGIONELLA	87077	$75.00
MAA0017A	CULTURE, STOOL, ALL ENTERICS	87045	$80.00
MAA0018A	CULTURE, STOOL, CHOLERA	87045	$80.00
MAA0019A	CULTURE, STOOL, ECOLI 0157:H7	87045	$85.00
MAA0020A	CULTURE, STOOL, SALMONELLA	87045	$22.00
MAA0021A	CULTURE, STOOL, SHIGELLA	87045	$42.00
MAA0026A	CULTURE, THROAT, ALL AEROBES	87070	$119.00
MAA0023A	CULTURE, THROAT, DIPHTHERIA	87070	$30.00
MAA0024A	CULTURE, THROAT, STREPTOCOCCUS	87070	$20.00
MZZ0445A	CULTURE, VAGINAL / STREP	87070	$85.00
MAA0010A	ECOLI 0157:H7, CULTURE CONFIRM - SEROLOGICAL	87147	$39.00
MAA0011A	FRANCISELLA, CULTURE CONFIRM, SEROLOGICAL	87147	$15.00
MAA0012A	HAEMOPHILUS, CULTURE CONFIRM - SEROLOGICAL	87147	$85.00
MAA0002A	ID, ADDITIONAL BIOS, AEROBE, API 20E	87077	$35.00
MAA0027A	ID, DEFINITIVE, BACILLUS	87077	$35.00
MZZ0449A	ID, DEFINITIVE, BETA STREP	87077	$88.00
MAA0028A	ID, DEFINITIVE, BORDETELLA	87077	$65.00
MAA0029A	ID, DEFINITIVE, BRUCELLA	87077	$45.00
MAA0030A	ID, DEFINITIVE, CAMPYLOBACTER	87077	$35.00

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Procedure No.	Procedure Name	CPT	Cost
MAA0031A	ID, DEFINITIVE, ENTERIC BACTERIA	87077	$88.00
MZZ0447A	ID, DEFINITIVE, ENTEROCOCCUS	87077	$35.00
MAA0032A	ID, DEFINITIVE, GRAM NEGATIVE ROD	87077	$35.00
MAA0033A	ID, DEFINITIVE, GRAM POSITIVE ROD	87077	$35.00
MAA0034A	ID, DEFINITIVE, HAEMOPHILUS	87077	$60.00
MAA0035A	ID, DEFINITIVE, LEGIONELLA	87077	$25.00
MAA0036A	ID, DEFINITIVE, NEISSERIA	87077	$75.00
MAA0003A	ID, DEFINITIVE, SALMONELLA	87077	$62.00
MAA0006A	ID, DEFINITIVE, SHIGELLA	87077	$67.00
MAA0037A	ID, DEFINITIVE, STAPHYLOCOCCUS	87077	$35.00
MAA0038A	ID, DEFINITIVE, STREPTOCOCCUS	87077	$88.00
MAA0014A	LEGIONELLA IDENTICATION, FA	87278	$75.00
MAA0013A	NEISSERIA, CULTURE CONFIRM, SEROLOGICAL	87147	$56.00
MAA0004A	SALMONELLA, CULTURE CONFIRM, SEROLOGICAL	87147	$119.00
MAA0005A	SHIGELLA, CULTURE CONFIRM, SEROLOGICAL	87147	$73.00
MAA0040A	SMEAR, ACID-FAST STAIN	87206	$10.00
MAA0045A	SMEAR, BACTERIA, WET MOUNT	87210	$5.00
MAA0041A	SMEAR, FA, GROUP A STREP	87206	$10.00
MAA0042A	SMEAR, FA, PERTUSSIS	87265	$50.00
MAA0043A	SMEAR, FLAGELLA STAIN	87205	$25.00
MAA0044A	SMEAR, GRAM STAIN, AEROBE	87205	$5.00
MAA0015A	STREPTOCOCCUS, CULTURE CONFIRM - SEROLOGICAL	87430	$39.00
MAA0046A	TOXIN ASSAY, C DIPHTHERIAE	86301	$15.00
MAA0047A	TOXIN ASSAY, EHEC, SHIGA LIKE TOXIN	87427	$38.00
MAA0048A	TOXIN ASSAY, TOXIC SHOCK (TSST-1)	87427	$38.00
MAA0008A	VIBRIO CHOLERAE, CULTURE CONFIRM - SEROLOGICAL	87147	$70.00
Aerobic isolation, definitive I.D.			
MAA0039A	AEROBIC BACTERIA, SUSCEPTIBILITY TESTING	87181	$45.00
MAZ0166A	BACTERIAL FATTY ACID ANALYSIS	87143	$35.00
MAA0007A	BACTERIAL ID, GAS LIQUID CHROMATOGRAPHY	87143	$35.00
MAA0009A	BRUCELLA, CULTURE CONFIRM., SEROLOGICAL	87147	$15.00
MAA0025A	CULTURE, ALL AEROBES	87070	$119.00
MAA0016A	CULTURE, BLOOD, ALL AEROBES	87040	$119.00
MZZ0444A	CULTURE, FRANCISELLA	87077	$70.00
MAA0022A	CULTURE, LEGIONELLA	87077	$75.00
MAA0017A	CULTURE, STOOL, ALL ENTERICS	87045	$80.00
MAA0018A	CULTURE, STOOL, CHOLERA	87045	$80.00
MAA0019A	CULTURE, STOOL, ECOLI 0157:H7	87045	$85.00
MAA0020A	CULTURE, STOOL, SALMONELLA	87045	$22.00
MAA0021A	CULTURE, STOOL, SHIGELLA	87045	$42.00
MAA0026A	CULTURE, THROAT, ALL AEROBES	87070	$119.00
MAA0023A	CULTURE, THROAT, DIPHTHERIA	87070	$30.00
MAA0024A	CULTURE, THROAT, STREPTOCOCCUS	87070	$20.00
MAA0010A	ECOLI 0157:H7, CULTURE CONFIRM - SEROLOGICAL	87147	$39.00
MAA0011A	FRANCISELLA, CULTURE CONFIRM, SEROLOGICAL	87147	$15.00
MAA0012A	HAEMOPHILUS, CULTURE CONFIRM - SEROLOGICAL	87147	$85.00
MAA0002A	ID, ADDITIONAL BIOS, AEROBE, API 20E	87077	$35.00
MAA0027A	ID, DEFINITIVE, BACILLUS	87077	$35.00
MZZ0449A	ID, DEFINITIVE, BETA STREP	87077	$88.00
MAA0028A	ID, DEFINITIVE, BORDETELLA	87077	$65.00
MAA0029A	ID, DEFINITIVE, BRUCELLA	87077	$45.00
MAA0030A	ID, DEFINITIVE, CAMPYLOBACTER	87077	$35.00
MAA0031A	ID, DEFINITIVE, ENTERIC BACTERIA	87077	$88.00
MZZ0447A	ID, DEFINITIVE, ENTEROCOCCUS	87077	$35.00
MAA0032A	ID, DEFINITIVE, GRAM NEGATIVE ROD	87077	$35.00
MAA0033A	ID, DEFINITIVE, GRAM POSITIVE ROD	87077	$35.00
MAA0034A	ID, DEFINITIVE, HAEMOPHILUS	87077	$60.00
MAA0035A	ID, DEFINITIVE, LEGIONELLA	87077	$25.00
MAA0036A	ID, DEFINITIVE, NEISSERIA	87077	$75.00
MAA0003A	ID, DEFINITIVE, SALMONELLA	87077	$62.00
MAA0006A	ID, DEFINITIVE, SHIGELLA	87077	$67.00
MAA0037A	ID, DEFINITIVE, STAPHYLOCOCCUS	87077	$35.00
MAA0038A	ID, DEFINITIVE, STREPTOCOCCUS	87077	$88.00
MAA0014A	LEGIONELLA IDENTICATION, FA	87278	$75.00
MAA0013A	NEISSERIA, CULTURE CONFIRM, SEROLOGICAL	87147	$56.00
MAA0004A	SALMONELLA, CULTURE CONFIRM, SEROLOGICAL	87147	$119.00

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Procedure No.	Procedure Name	CPT	Cost
MAA0005A	SHIGELLA, CULTURE CONFIRM, SEROLOGICAL	87147	$73.00
MAA0040A	SMEAR, ACID-FAST STAIN	87206	$10.00
MAA0045A	SMEAR, BACTERIA, WET MOUNT	87210	$5.00
MZZ0469A	SMEAR, DFA BORRELIA, HUMAN	87299	$35.00
MAA0041A	SMEAR, FA, GROUP A STREP	87206	$10.00
MAA0042A	SMEAR, FA, PERTUSSIS	87265	$50.00
MAA0043A	SMEAR, FLAGELLA STAIN	87205	$25.00
MAA0044A	SMEAR, GRAM STAIN, AEROBE	87205	$5.00
MAA0015A	STREPTOCOCCUS, CULTURE CONFIRM - SEROLOGICAL	87430	$39.00
MAA0046A	TOXIN ASSAY, C DIPHTHERIAE	86301	$15.00
MAA0047A	TOXIN ASSAY, EHEC, SHIGA LIKE TOXIN	87427	$38.00
MAA0048A	TOXIN ASSAY, TOXIC SHOCK (TSST-1)	87427	$38.00
MAA0008A	VIBRIO CHOLERAE, CULTURE CONFIRM - SEROLOGICAL	87147	$70.00
Anaerobic isolation, comprehensive			
MAA0007A	BACTERIAL ID, GAS LIQUID CHROMATOGRAPHY	87143	$35.00
MAK0073A	CULTURE, ALL ANAEROBES	87075	$70.00
MAK0074A	CULTURE, BOTULINUM - HUMAN	87075	$70.00
MCK0291A	ID, DEFINITIVE, ANAEROBE	87076	$35.00
MAK0077A	SMEAR, GRAM STAIN, ANAEROBE	87205	$5.00
MAK0076A	TOXIN ASSAY, BOTULINUM	87001	$163.00
Anaerobic isolation, definitive I.D.			
MAA0007A	BACTERIAL ID, GAS LIQUID CHROMATOGRAPHY	87143	$35.00
MAK0073A	CULTURE, ALL ANAEROBES	87075	$70.00
MAK0074A	CULTURE, BOTULINUM - HUMAN	87075	$70.00
MCK0291A	ID, DEFINITIVE, ANAEROBE	87076	$35.00
MAK0077A	SMEAR, GRAM STAIN, ANAEROBE	87205	$5.00
MAK0076A	TOXIN ASSAY, BOTULINUM	87001	$163.00
MZZ0429A	TOXIN STUDIES - BOTULINUM TOXIN	87001	$163.00
MZZ0430A	TOXIN STUDIES - CLOSTRIDIUM TOXIN	87449	$21.00
Bioterrorism culture - submitted by law enforcement agencies ONLY			
	BIOTERRORISM CULTURE - SUBMITTED BY LAW ENFORCEMENT AGENCIES ONLY		$0.00
Bioterrorism smear - submitted by law enforcement agencies ONLY			
	BIOTERRORISM SMEAR - SUBMITTED BY LAW ENFORCEMENT AGENCIES ONLY		$0.00
Bordetella pertussis: Culture			
MZZ0376A	CULTURE, PERTUSSIS	87077	$75.00
MAA0028A	ID, DEFINITIVE, BORDETELLA	87077	$65.00
MAA0042A	SMEAR, FA, PERTUSSIS	87265	$50.00
MAA0044A	SMEAR, GRAM STAIN, AEROBE	87205	$5.00
Bordetella pertussis: Molecular testing			
MZZ0377A	BORDETELLA PERTUSSIS, PCR	87798	$100.00
MZZ0316A	MOLECULAR STUDIES - PCR	87798	$27.00
C. botulinum isolation			
MZZ0379A	C. BOTULINUM ISOLATION	87076	$70.00
MAK0074A	CULTURE, BOTULINUM - HUMAN	87075	$70.00
MAK0076A	TOXIN ASSAY, BOTULINUM	87001	$163.00
MZZ0429A	TOXIN STUDIES - BOTULINUM TOXIN	87001	$163.00
Diphtheria culture			
MAA0023A	CULTURE, THROAT, DIPHTHERIA	87070	$30.00
MAA0046A	TOXIN ASSAY, C DIPHTHERIAE	86301	$15.00
Drug susceptibility testing: MRSA (methicillin resistant Staphylococcus aureus)			
MAA0052A	DRUG SUSCEPTIBILITY TESTING - MRSA	87181	$45.00
Drug susceptibility testing: Neisseria gonorrhoeae			
MAA0051A	DRUG SUSCEPTIBILITY TESTING - N. GON.	87181	$45.00
Drug susceptibility testing: One drug susceptibility testing			
MAA0039A	DRUG SUSCEPTIBILITY - MISC, ONE DRUG	87181	$45.00
Drug susceptibility testing: VRE (vancomycin resistant enterococcus)			
MAA0050A	DRUG SUSCEPTIBILTY TESTING - VRE	87181	$45.00
Drug susceptibility testing: VRSA (vancomycin resistant Staphylococcus aureus)			
MAA0049A	DRUG SUSCEPTIBILTY TESTING - VRSA	87181	$45.00

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Procedure No.	Procedure Name	CPT	Cost
Enteric pathogens			
MAA0017A	CULTURE, STOOL, ALL ENTERICS	87045	$80.00
MAA0018A	CULTURE, STOOL, CHOLERA	87045	$80.00
MAA0019A	CULTURE, STOOL, ECOLI 0157:H7	87045	$85.00
MAA0020A	CULTURE, STOOL, SALMONELLA	87045	$22.00
MAA0021A	CULTURE, STOOL, SHIGELLA	87045	$42.00
MAA0010A	ECOLI 0157:H7, CULTURE CONFIRM - SEROLOGICAL	87147	$39.00
MAA0030A	ID, DEFINITIVE, CAMPYLOBACTER	87077	$35.00
MAA0031A	ID, DEFINITIVE, ENTERIC BACTERIA	87077	$88.00
MZZ0447A	ID, DEFINITIVE, ENTEROCOCCUS	87077	$35.00
MAA0032A	ID, DEFINITIVE, GRAM NEGATIVE ROD	87077	$35.00
MAA0003A	ID, DEFINITIVE, SALMONELLA	87077	$62.00
MAA0006A	ID, DEFINITIVE, SHIGELLA	87077	$67.00
MAA0004A	SALMONELLA, CULTURE CONFIRM, SEROLOGICAL	87147	$119.00
MAA0005A	SHIGELLA, CULTURE CONFIRM, SEROLOGICAL	87147	$73.00
MAA0008A	VIBRIO CHOLERAE, CULTURE CONFIRM - SEROLOGICAL	87147	$70.00
Genetic probe: Gonorrhea/chlamydia (GC/CT)			
MBB0191A	GENPROBE, ID PROBE, GC/CT	87490, 87590	$12.00
MBB0192A	GENPROBE, ID, ADD PROBE CT	87490	$12.00
MBB0193A	GENPROBE, ID, ADD PROBE GC	87590	$12.00
Identification and typing: Haemophilus influenzae			
MAA0012A	HAEMOPHILUS, CULTURE CONFIRM - SEROLOGICAL	87147	$85.00
MZZ0399A	ID AND TYPING - HEMOPHILUS INFLUENZAE	87147	$85.00
MAA0034A	ID, DEFINITIVE, HAEMOPHILUS	87077	$60.00
Identification and typing: Legionella			
MAA0035A	ID, DEFINITIVE, LEGIONELLA	87077	$25.00
MAA0014A	LEGIONELLA IDENTICATION, FA	87278	$75.00
MAY0163A	PCR, LEGIONELLA	83898	$56.00
Identification and typing: Neisseria meningitides			
MAA0036A	ID, DEFINITIVE, NEISSERIA	87077	$75.00
MAA0013A	NEISSERIA, CULTURE CONFIRM, SEROLOGICAL	87147	$56.00
Identification and typing: Noncomplex typing (Vibrio, Brucella, etc.)			
MZZ0400A	ID & TYPING - NONCOMPLEX ORGANISMS (VIBRIO, BRUCELLA, ETC.)	87147	$40.00
Identification and typing: Other complex typing			
MZZ0393A	ID & TYPING - OTHER BACTERIA, COMPLEX	87147	$85.00
Identification and typing: Salmonella			
MAA0002A	ID, ADDITIONAL BIOS, AEROBE, API 20E	87077	$35.00
MAA0003A	ID, DEFINITIVE, SALMONELLA	87077	$62.00
MAA0004A	SALMONELLA, CULTURE CONFIRM, SEROLOGICAL	87147	$119.00
Identification and typing: Shigella			
MAA0006A	ID, DEFINITIVE, SHIGELLA	87077	$67.00
MAA0005A	SHIGELLA, CULTURE CONFIRM, SEROLOGICAL	87147	$73.00
Identification and typing: Streptococcus, Group A (GAS			
MAA0038A	ID, DEFINITIVE, STREPTOCOCCUS	87077	$88.00
MAA0041A	SMEAR, FA, GROUP A STREP	87206	$10.00
MAA0015A	STREPTOCOCCUS, CULTURE CONFIRM - SEROLOGICAL	87430	$39.00
Identification and typing: Streptococcus, typing Groups B, C, D, G			
MAA0038A	ID, DEFINITIVE, STREPTOCOCCUS	87077	$88.00
MAA0015A	STREPTOCOCCUS, CULTURE CONFIRM - SEROLOGICAL	87430	$39.00
Molecular studies: Polymerase chain reaction (PCR)			
MZZ0316A	MOLECULAR STUDIES - PCR	87798	$27.00
MZZ0450A	NOROVIRUS (NORWALK-LIKEVIRUS) PCR	87798	$56.00
MAY0163A	PCR, LEGIONELLA	83898	$56.00
MZZ0434A	VIRUS DETECTION BY PCR	87798	$125.00
Molecular studies: Pulsed-field gel electrophoresis (PFGE)			
MCA0269A	BACTERIOLOGY, PFGE, DIGESTION	87152	$37.00
MCA0268A	BACTERIOLOGY, PFGE, EXTRACTION	87152	$50.00
MCA0270A	BACTERIOLOGY, PFGE, SEPARATION	87152	$25.00

Procedure No.	Procedure Name	CPT	Cost
Neisseria gonorrhoeae culture			
MCE0278A	CULTURE, GONORRHEA	87077	$25.00
MBB0193A	GENPROBE, ID, ADD PROBE GC	87590	$5.00
MAA0036A	ID, DEFINITIVE, NEISSERIA	87077	$75.00
MAA0013A	NEISSERIA, CULTURE CONFIRM, SEROLOGICAL	87147	$56.00
MAA0044A	SMEAR, GRAM STAIN, AEROBE	87205	$5.00
Toxin studies: Botulinum toxin			
MAK0076A	TOXIN ASSAY, BOTULINUM	87001	$163.00
Toxin studies: Clostridium difficile toxin			
MZZ0430A	TOXIN STUDIES - CLOSTRIDIUM TOXIN	87449	$21.00
Toxin studies: Shiga toxin			
MAA0047A	TOXIN ASSAY, EHEC, SHIGA LIKE TOXIN	87427	$38.00
MZZ0431A	TOXIN STUDIES - SHIGA TOXIN	87427	$38.00
Toxin studies: Toxic Shock Syndrome Toxin-1 (TSST)			
MAA0048A	TOXIN ASSAY, TOXIC SHOCK (TSST-1)	87427	$38.00
Toxin studies: Vibrio cholera toxin			
MAA0018A	CULTURE, STOOL, CHOLERA	87045	$80.00
MAA0008A	VIBRIO CHOLERAE, CULTURE CONFIRM - SEROLOGICAL	87147	$70.00
Vibrio culture			
MAA0018A	CULTURE, STOOL, CHOLERA	87045	$80.00
MAA0008A	VIBRIO CHOLERAE, CULTURE CONFIRM - SEROLOGICAL	87147	$70.00

Mycobacteriology-mycology

Acid fast bacillus (AFB): Amplification only			
MAB0050A	MYCOBACTERIA TUBERCULOSIS, AMPLIFIED PROBE TECHNIQUE	87556	$35.00
Acid fast bacillus (AFB): Culture probe only			
MAC0053A	AFB, TB IDENTIFICATION, PROBE	87149	$22.00
Acid fast bacillus (AFB): Culture, any source			
MZZ0062A	AFB CULTURE	87116	$26.00
MAH0068A	AFB SMEAR	87206	$16.00
MAC0052A	AFB, IDENTIFICATION, HPLC	87143	$17.00
MAG0066A	AFB, SPECIMEN CONCENTRATION	87015	$12.00
Acid fast bacillus (AFB): Drug susceptibility studies: Indirect susceptibility, each drug			
MAD0065A	AFB AGAR PROPORTION DRUGS, CAPREOMYCIN	87190	$8.00
MAD0070A	AFB AGAR PROPORTION DRUGS, ETHAMBUTOL	87190	$8.00
MAD0067A	AFB AGAR PROPORTION DRUGS, ETHIONAMIDE	87190	$8.00
MAD0071A	AFB AGAR PROPORTION DRUGS, ISONIAZID	87190	$8.00
MAD0066A	AFB AGAR PROPORTION DRUGS, KANAMYCIN	87190	$8.00
MAD0063A	AFB AGAR PROPORTION DRUGS, OFLOXACIN	87190	$8.00
MAD0064A	AFB AGAR PROPORTION DRUGS, RIFABUTIN	87190	$8.00
MAD0069A	AFB AGAR PROPORTION DRUGS, RIFAMPIN	87190	$8.00
MAD0068A	AFB AGAR PROPORTION DRUGS, STREPTOMYCIN	87190	$8.00
MAD0077A	AFB PRIMARY DRUG, BACTEC, ETHAMBUTOL	87188	$13.00
MAD0062A	AFB PRIMARY DRUG, BACTEC, ISONIAZID	87188	$13.00
MAD0061A	AFB PRIMARY DRUG, BACTEC, RIFAMPIN	87188	$13.00
MAD0075A	AFB SECONDARY DRUG, BACTEC, ETHIONAMIDE	87188	$13.00
MAD0074A	AFB SECONDARY DRUG, BACTEC, KANAMYCIN	87188	$13.00
MAD0072A	AFB SECONDARY DRUG, BACTEC, OFLOXACIN	87188	$13.00
MAD0073A	AFB SECONDARY DRUG, BACTEC, RIFABUTIN	87188	$13.00
MAD0076A	AFB SECONDARY DRUG, BACTEC, STREPTOMYCIN	87188	$13.00
Acid fast bacillus (AFB): Drug susceptibility studies: M. kansasii susceptibility, Rifampin			
MBZ0266A	AFB, M. KANSASII, RIFAMPIN, AGAR	87190	$8.00
Acid fast bacillus (AFB): Drug susceptibility studies: Primary panel			
MAD0077A	AFB PRIMARY DRUG, BACTEC, ETHAMBUTOL	87188	$13.00
MAD0062A	AFB PRIMARY DRUG, BACTEC, ISONIAZID	87188	$13.00
MAD0061A	AFB PRIMARY DRUG, BACTEC, RIFAMPIN	87188	$13.00
MZZ0061A	AFB PZA ONLY	87188	$8.00
Acid fast bacillus (AFB): Drug susceptibility studies: Secondary panel			
MAD0065A	AFB AGAR PROPORTION DRUGS, CAPREOMYCIN	87190	$8.00
MAD0070A	AFB AGAR PROPORTION DRUGS, ETHAMBUTOL	87190	$8.00

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Procedure No.	Procedure Name	CPT	Cost
MAD0067A	AFB AGAR PROPORTION DRUGS, ETHIONAMIDE	87190	$8.00
MAD0071A	AFB AGAR PROPORTION DRUGS, ISONIAZID	87190	$8.00
MAD0066A	AFB AGAR PROPORTION DRUGS, KANAMYCIN	87190	$8.00
MAD0063A	AFB AGAR PROPORTION DRUGS, OFLOXACIN	87190	$8.00
MAD0064A	AFB AGAR PROPORTION DRUGS, RIFABUTIN	87190	$8.00
MAD0069A	AFB AGAR PROPORTION DRUGS, RIFAMPIN	87190	$8.00
MAD0068A	AFB AGAR PROPORTION DRUGS, STREPTOMYCIN	87190	$8.00
MAD0075A	AFB SECONDARY DRUG, BACTEC, ETHIONAMIDE	87188	$13.00
MAD0074A	AFB SECONDARY DRUG, BACTEC, KANAMYCIN	87188	$13.00
MAD0072A	AFB SECONDARY DRUG, BACTEC, OFLOXACIN	87188	$13.00
MAD0073A	AFB SECONDARY DRUG, BACTEC, RIFABUTIN	87188	$13.00
MAD0076A	AFB SECONDARY DRUG, BACTEC, STREPTOMYCIN	87188	$13.00
Acid fast bacillus (AFB): Identification, referred isolates			
MZZ0451A	AFB, BIOCHEMICALS, COMPLEX	87118	$30.00
MAC0052A	AFB, IDENTIFICATION, HPLC	87143	$17.00
MAC0053A	AFB, TB IDENTIFICATION, PROBE	87149	$22.00
Acid fast bacillus (AFB): Smear and culture			
MZZ0062A	AFB CULTURE	87116	$26.00
MAH0068A	AFB SMEAR	87206	$16.00
MAG0066A	AFB, SPECIMEN CONCENTRATION	87015	$12.00
Acid fast bacillus (AFB): Smear only			
MAH0068A	AFB SMEAR	87206	$16.00
Direct High Performance Liquid Chromatography (HPLC)			
MAF0064A	AFB DETECTION BY HPLC	87143	$31.00
Fungus: Reference: Culture			
MCD0276A	AFB, HPLC, FLUORESCENT DETECTION	87143	$30.00
MZZ0174A	FUNGAL TEST, ASCOSPORE	87106	$14.00
MZZ0178A	FUNGAL TEST, ASSIMILATION / FERMENT BIOS	87106	$25.00
MZZ0176A	FUNGAL TEST, ASSIMILATION BIOCHEMICALS	87106	$18.00
MZZ0169A	FUNGAL TEST, BENOMYL, BASIDIOMYCETES	87106	$15.00
MZZ0172A	FUNGAL TEST, BHI 37C	87106	$13.00
MZZ0168A	FUNGAL TEST, CAFFEIC ACID	87106	$7.00
MZZ0170A	FUNGAL TEST, DERMATOPHYTE	87106	$12.00
MAJ0070A	FUNGAL TEST, FERMENT BIOCHEMICALS	87106	$14.00
MZZ0171A	FUNGAL TEST, GERM TUBE, MOLDS	87106	$12.00
MZZ0167A	FUNGAL TEST, HAIR PENETRATION	87106	$16.00
MZZ0173A	FUNGAL TEST, RHAMNOSE ASSIMULATION	87077	$15.00
MZZ0179A	FUNGAL TEST, TEMPS, ASPERGILLUS	87106	$26.00
MZZ0185A	FUNGUS IDENTIFICATION, PROBE	87797	$23.00
MZZ0182A	MYCOLOGY EXAM, EXTEND MOLD STUDY	87107	$21.00
MZZ0181A	MYCOLOGY EXAM, GENERAL MOLD	87107	$19.00
MZZ0177A	MYCOLOGY EXAM, GENERAL YEAST	87106	$20.00
MZZ0180A	MYCOLOGY EXAM, NOCARD / STREP / ACTINO	87106	$75.00
MZZ0175A	MYCOLOGY EXAM, SLIDE CULTURE	87106	$16.00
MZZ0183A	SMEAR, FUNGAL ACID-FAST	87206	$8.00
MZZ0184A	SMEAR, FUNGAL WET MOUNT	87210	$7.00
Fungus: Reference: Identification			
MCD0276A	AFB, HPLC, FLUORESCENT DETECTION	87143	$30.00
MZZ0174A	FUNGAL TEST, ASCOSPORE	87106	$14.00
MZZ0178A	FUNGAL TEST, ASSIMILATION / FERMENT BIOS	87106	$25.00
MZZ0176A	FUNGAL TEST, ASSIMILATION BIOCHEMICALS	87106	$18.00
MZZ0169A	FUNGAL TEST, BENOMYL, BASIDIOMYCETES	87106	$15.00
MZZ0172A	FUNGAL TEST, BHI 37C	87106	$13.00
MZZ0168A	FUNGAL TEST, CAFFEIC ACID	87106	$7.00
MZZ0170A	FUNGAL TEST, DERMATOPHYTE	87106	$12.00
MAJ0070A	FUNGAL TEST, FERMENT BIOCHEMICALS	87106	$14.00
MZZ0171A	FUNGAL TEST, GERM TUBE, MOLDS	87106	$12.00
MZZ0167A	FUNGAL TEST, HAIR PENETRATION	87106	$16.00
MZZ0173A	FUNGAL TEST, RHAMNOSE ASSIMULATION	87077	$15.00
MZZ0179A	FUNGAL TEST, TEMPS, ASPERGILLUS	87106	$26.00
MZZ0185A	FUNGUS IDENTIFICATION, PROBE	87797	$23.00
MZZ0182A	MYCOLOGY EXAM, EXTEND MOLD STUDY	87107	$21.00
MZZ0181A	MYCOLOGY EXAM, GENERAL MOLD	87107	$19.00

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Procedure No.	Procedure Name	CPT	Cost
MZZ0177A	MYCOLOGY EXAM, GENERAL YEAST	87106	$20.00
MZZ0180A	MYCOLOGY EXAM, NOCARD / STREP / ACTINO	87106	$75.00
MZZ0175A	MYCOLOGY EXAM, SLIDE CULTURE	87106	$16.00
MZZ0183A	SMEAR, FUNGAL ACID-FAST	87206	$8.00
MZZ0184A	SMEAR, FUNGAL WET MOUNT	87210	$7.00
Fungus: Reference: Probe only			
MZZ0189A	FUNGUS, ID, GENETIC PROBE ONLY	87797	$30.00

Parasitology

Blood / tissue parasites			
MBW0259A	CULTURE, BORRELIA, HUMAN	87081	$119.00
MAR0121A	CULTURE, FOR HEMOFLAGELLATE	87081	$70.00
MAR0122A	CULTURE, NAEGLERIA-ACANTHAMOEBA	87077	$156.00
MAR0132A	INOCULATION, ANIMAL, HEMOFLAGELLLATE	87003	$70.00
MAR0133A	PARASITE TEST, SCHISTO-KIT	87177	$60.00
MAR0124A	PARASITOLOGY EXAM, CYSTICERCUS	87177	$70.00
MAR0130A	PARASITOLOGY EXAM, TISSUE, ABSCESS	87207	$70.00
MAR0131A	PARASITOLOGY EXAM, TISSUE, BIOPSY	87207	$70.00
MAR0125A	PARASITOLOGY EXAM, TRICHINOSIS	87117	$70.00
MAR0123A	PARASITOLOGY EXAM, URINE, WITH CONCENTRATE	87177	$65.00
MBW0260A	SMEAR, GIEMSA, HUMAN	87207	$45.00
MAR0126A	SMEAR, O&P, THICK BLOOD	87207	$95.00
MAR0127A	SMEAR, O&P, THICK BLOOD, NO PROCESSING	87207	$45.00
MAR0128A	SMEAR, O&P, THIN BLOOD	87207	$115.00
MAR0129A	SMEAR, O&P, THIN BLOOD, NO PROCESSING	87207	$70.00
MAR0134A	SMEAR, O&P, WET	87210	$58.00
Intestinal parasites			
MBU0250A	PARASITOLOGY EXAM, O&P WITH CONCENTRATE	87177	$80.00
MBU0251A	SMEAR, O&P ACID FAST	87206	$55.00
MBU0252A	SMEAR, O&P CHROMOTOPE 2R	87207	$60.00
MBU0253A	SMEAR, O&P DIRECT WET	87210	$70.00
MBU0254A	SMEAR, O&P TRICHROME	87209	$38.00
Parasite culture			
MAR0121A	CULTURE, FOR HEMOFLAGELLATE	87081	$70.00
MAR0122A	CULTURE, NAEGLERIA-ACANTHAMOEBA	87077	$156.00
Pinworm swab			
MCF0280A	PARASITOLOGY EXAM, PINWORM SWAB	87172	$31.00
Worm identification			
MDF0370A	IDENTIFICATION, WORM, COMPLEX	87177	$44.00
MDF0452A	IDENTIFICATION, WORM, SIMPLE	87177	$44.00

Serology

Acute (comprehensive) hepatitis panel			
MBD0201A	HEPATITIS A AB, IGM (HAAB)	86709	$48.00
MZZ0214A	HEPATITIS B CORE AB, IGM	86705	$48.00
MBK0213A	HEPATITIS B SURFACE AG	87340	$8.00
MBL0217A	HEPATITIS C	86803	$15.00
Arbovirus: Immunoglobulin G (IgG)			
MAL0083A	ARBOVIRUS IGG, DENGUE	86790	$20.00
MAL0454A	ARBOVIRUS IGG, EEE	86652	$20.00
MZZ0080A	ARBOVIRUS IGG, LACROSSE (CAL GROUP).	86651	$20.00
MAL0455A	ARBOVIRUS IGG, ST LOUIS ENCEPH.	86653	$20.00
MAL0456A	ARBOVIRUS IGG, WEE	86654	$20.00
MZZ0081A	ARBOVIRUS IGG, WEST NILE	86788	$20.00
Arbovirus: Immunoglobulin M (IgM)			
MAM0085A	ARBOVIRUS IGM, DENGUE	86790	$32.00
MAM0457A	ARBOVIRUS IGM, EEE	86652	$32.00
MZZ0079A	ARBOVIRUS IGM, LACROSSE (CAL GROUP)	86651	$32.00
MAM0458A	ARBOVIRUS IGM, ST LOUIS ENCEPH.	86653	$32.00
MAM0459A	ARBOVIRUS IGM, WEE	86654	$32.00
MZZ0097A	ARBOVIRUS IGM, WEST NILE	86789	$32.00

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Procedure No.	Procedure Name	CPT	Cost
Arbovirus: Panel			
MAL0083A	ARBOVIRUS IGG, DENGUE	86790	$20.00
MAL0454A	ARBOVIRUS IGG, EEE	86652	$20.00
MZZ0080A	ARBOVIRUS IGG, LACROSSE (CAL GROUP).	86651	$20.00
MAL0455A	ARBOVIRUS IGG, ST LOUIS ENCEPH.	86653	$20.00
MAL0456A	ARBOVIRUS IGG, WEE	86654	$20.00
MZZ0081A	ARBOVIRUS IGG, WEST NILE	86788	$20.00
MAM0085A	ARBOVIRUS IGM, DENGUE	86790	$32.00
MAM0457A	ARBOVIRUS IGM, EEE	86652	$32.00
MZZ0079A	ARBOVIRUS IGM, LACROSSE (CAL GROUP)	86651	$32.00
MAM0458A	ARBOVIRUS IGM, ST LOUIS ENCEPH.	86653	$32.00
MAM0459A	ARBOVIRUS IGM, WEE	86654	$32.00
MZZ0097A	ARBOVIRUS IGM, WEST NILE	86789	$32.00
Aspergillus			
MZZ0101A	SEROLOGY, ASPERGILLUS	86606	$24.00
Brucella			
MZZ0135A	SEROLOGY, BRUCELLA	86622	$16.00
Cat scratch fever (Bartonella)			
MAS0137A	SEROLOGY, BARTEONELLA HENSELAE, IFA	86611	$32.00
MAS0138A	SEROLOGY, BARTEONELLA QUINTANA, IFA	86611	$32.00
Cytomegalovirus (CMV): IgG			
MAU0143A	CYTOMEGALOVIRUS IGG	86644	$32.00
Cytomegalovirus (CMV): IgM			
MAV0145A	CYTOMEGALOVIRUS IGM	86645	$35.00
Cytomegalovirus (CMV): Panel			
MAU0143A	CYTOMEGALOVIRUS IGG	86644	$32.00
MAV0145A	CYTOMEGALOVIRUS IGM	86645	$35.00
Erlichia			
MZZ0155A	SEROLOGY, EHRLICHIA, IFA	86666	$44.00
FTA (fluorescent triponemal antibody) only			
MBA0168A	SYPHILIS, FTA-ABS	85680	$30.00
Fungus: Identification			
MZZ0473A	SEROLOGY, BLASTOMYCES	86612	$22.00
MZZ0474A	SEROLOGY, COCCIDIODES	86635	$22.00
MZZ0475A	SEROLOGY, HISTOPLASMA	86698	$22.00
Fungus: Panel			
MZZ0473A	SEROLOGY, BLASTOMYCES	86612	$22.00
MZZ0474A	SEROLOGY, COCCIDIODES	86635	$22.00
MZZ0475A	SEROLOGY, HISTOPLASMA	86698	$22.00
Hantavirus, IgG / IgM			
MBC0198A	HANTAVIRUS IGG / IGM	86790	$87.00
Hepatitis A: IgM			
MBD0201A	HEPATITIS A AB, IGM (HAAB)	86709	$48.00
Hepatitis A: Total			
MBE0203A	HEPATITIS A TOTAL	86708	$12.00
Hepatitis B e Ab			
MBG0207A	HEPATITIS B E AB	86707	$20.00
Hepatitis B e Ag			
MBH0209A	HEPATITIS B E AG	87350	$12.00
Hepatitis B: Core IgM antibody			
MZZ0214A	HEPATITIS B CORE AB, IGM	86705	$48.00
Hepatitis B: Core total antibody			
MBF0205A	HEPATITIS B CORE AB, TOTAL	86704	$32.00
Hepatitis B: Surface antibody (Ab)			
MBJ0211A	HEPATITIS B SURFACE AB	86706	$14.00
Hepatitis B: Surface antigen (Ag)			
MBK0213A	HEPATITIS B SURFACE AG	87340	$8.00

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Procedure No.	Procedure Name	CPT	Cost
Hepatitis C (HCV)			
MBL0217A	HEPATITIS C	86803	$15.00
Hepatitis C (RIBA)			
MZZ0215A	HEPATITIS C (RIBA)	86804	$125.00
HIV / HCV			
MBL0217A	HEPATITIS C	86803	$15.00
MZZ0215A	HEPATITIS C (RIBA)	86804	$125.00
MBP0226A	HIV-1 EIA SERUM	86701	$8.50
MBQ0229A	HIV-1 WESTERN BLOT	86689	$25.00
Human immunodeficiency virus (HIV): Confirmation			
MBQ0229A	HIV-1 WESTERN BLOT	86689	$25.00
Human immunodeficiency virus (HIV): Oral HIV, Orasure			
MZZ0230A	HIV-1 EIA, ORAL FLUID	86701	$8.50
MZZ0231A	HIV-1 WESTERN BLOT, ORAL FLUID	86689	$25.00
Human immunodeficiency virus (HIV): Screen			
MZZ0232A	HIV-1 EIA DBS	86701	$8.50
MBP0226A	HIV-1 EIA SERUM	86701	$8.50
Legionella			
MBV0256A	SEROLOGY, LEGIONNAIRES, QUALITATIVE, IFA	86713	$55.00
MBV0257A	SEROLOGY, LEGIONNAIRES, QUANTITATIVE, IFA	86713	$40.00
Lyme (Borrelia) IgG/IgM panel			
MBX0262A	LYME (BORRELIA) DISEASE	86618	$36.00
Mumps: IgG			
MCB0272A	MUMPS, IGG	86735	$32.00
Mumps: IgM			
MCC0274A	SEROLOGY, MUMPS IGM, IFA	86735	$30.00
Plague (Yersinia)			
MCG0282A	SEROLOGY, YERSINIA PESTIS, IHA	86793	$12.00
Rickettsia / Ehrlichia Panel			
MZZ0155A	SEROLOGY, EHRLICHIA, IFA	86666	$44.00
MCR0315A	SEROLOGY, SPOTTED FEVER, IFA	86757	$32.00
MCR0316A	SEROLOGY, TYPHUS, IFA	86757	$32.00
Rickettsia Panel			
MCR0315A	SEROLOGY, SPOTTED FEVER, IFA	86757	$32.00
MCR0316A	SEROLOGY, TYPHUS, IFA	86757	$32.00
RPR (rapid plasma reagin) test			
MBY0264A	RPR QUALITATIVE	86592	$5.15
MBN0224A	RPR QUANTITATIVE	86593	$13.00
MBA0168A	SYPHILIS, FTA-ABS	85680	$30.00
MCS0318A	SYPHILIS, PARTICLE AGGLUTINATION (MHA-TP) (TP-PA)	85680	$10.00
RPR / Syphilis confirmation			
MBY0264A	RPR QUALITATIVE	86592	$5.15
MBN0224A	RPR QUANTITATIVE	86593	$13.00
MBA0168A	SYPHILIS, FTA-ABS	85680	$30.00
MCS0318A	SYPHILIS, PARTICLE AGGLUTINATION (MHA-TP) (TP-PA)	85680	$10.00
Rubella: IgG			
MCU0322A	RUBELLA IGG	86762	$8.00
Rubella: IgM			
MCT0320A	RUBELLA IGM	86762	$35.00
Rubella: Screen			
MCU0322A	RUBELLA IGG	86762	$8.00
Rubeola: IgG			
MCV0324A	RUBEOLA IGG	86765	$30.00

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Procedure No.	Procedure Name	CPT	Cost
Rubeola: IgM			
MCW0326A	RUBEOLA IGM	86765	$44.00
Toxoplasmosis: IgG			
MCY0330A	SEROLOGY, TOXOPLASMA, QUALITIATIVE, IFA	86777	$32.00
MCY0331A	SEROLOGY, TOXOPLASMA, QUANTITATIVE, IFA	86777	$40.00
Toxoplasmosis: IgM			
MCZ0333A	SEROLOGY, TOXOPLASMA IGM, IFA	86778	$45.00
Tularemia (Francisella)			
MZZ0334A	SEROLOGY, TULAREMIA (FRANCISCELLA)	86668	$50.00
Varicella zoster			
MDA0336A	VZV IGG	86787	$32.00
VDRL (venereal disease research laboratory) test			
MDB0338A	VDRL QUALITATIVE	86592	$25.00
MZZ0339A	VDRL TITER - QUANTITATIVE	86593	$15.00

Virology

Electron microscope studies only			
MAX0157A	ELECTRON MICROSOPY - OBSERVATION	88348	$340.00
MDE0367A	ELECTRON MICROSOPY - PHOTOGRAPHY	88348	$110.00
MAX0158A	EM, IMMUNE ELECTRON MICROSCOPY	88348	$356.00
Herpes simplex isolation			
MBM0220A	CULTURE, VIRUS, HERPES	87252	$80.00
MBM0222A	HSV 1, 2 IDENTIFICATION, DFA	87253	$75.00
Influenza: Subtyping			
MZZ0236A	HEMAGGLUTAINATION	87253	$45.00
MDE0365A	VIRUS DETECTION, HEMADSORPTION	87253	$41.00
MDE0366A	VIRUS TYPING, HEMAGGLUTINATION INHIBITION	86280	$56.00
Influenza: Surveillance			
MBS0240A	ADENOVIRUS IDENTIFICATION, DFA	87253	$77.00
MBS0239A	CULTURE, VIRAL, INFLUENZA	87252	$95.00
MBS0241A	ENTEROVIRUS IDENTIFICATION, DFA	87253	$82.00
MDE0359A	ENTEROVIRUS SCREEN, DFA	87253	$77.00
MZZ0236A	HEMAGGLUTAINATION	87253	$45.00
MBM0222A	HSV 1, 2 IDENTIFICATION, DFA	87253	$75.00
MBS0242A	INFLUENZA A, B IDENTIFICATION, DFA	87253	$45.00
MBS0243A	MUMPS IDENTIFICATION, DFA	87253	$85.00
MDE0362A	PARAINFLUENZA 1, 2, 3 IDENTIFICATION DFA	87253	$98.00
MBS0244A	PARAINFLUENZA 4 IDENFICATION DFA	87253	$80.00
MBS0245A	POLIOVIRUS TYPE SPECIFIC IDENTIFICATION, DFA	87253	$70.00
MDE0365A	VIRUS DETECTION, HEMADSORPTION	87253	$41.00
Virus: Viral detection by PCR			
MZZ0434A	VIRAL DETECTION BY PCR	87798	$125.00
MDD0356A	VIRAL, MOLECULAR SEQUENCING	83904	$125.00
MCN0306A	VIRUS, PCR, AGAROSE GEL	83894	$100.00
MCN0305A	VIRUS, PCR, RESTRICTION DIGESTION	83842	$70.00
MCN0303A	VIRUS, PCR, TYPING, 1 PRIMER ADDITIONAL	83848	$15.00
MCN0304A	VIRUS, PCR, TYPING, 1 PRIMER PAIR	83848	$30.00
Virus: Virus identification on submitted isolate (reference specimen)			
MBS0240A	ADENOVIRUS IDENTIFICATION, DFA	87253	$77.00
MDC0352A	CMV IDENTIFICATION, DFA	87253	$85.00
MDE0361A	CMV, SHELL VIAL, DFA	87254	$76.00
MDC0345A	CULTURE, VIRAL, REFERENCE	87252	$65.00
MDC0344A	CULTURE, VIRAL, SHELL VIAL	87254	$56.00
MAX0157A	ELECTRON MICROSOPY - OBSERVATION	88348	$340.00
MDE0367A	ELECTRON MICROSOPY - PHOTOGRAPHY	88348	$110.00
MAX0158A	EM, IMMUNE ELECTRON MICROSCOPY	88348	$356.00
MBS0241A	ENTEROVIRUS IDENTIFICATION, DFA	87253	$82.00
MDE0359A	ENTEROVIRUS SCREEN, DFA	87253	$77.00
MBM0222A	HSV 1, 2 IDENTIFICATION, DFA	87253	$75.00
MBS0242A	INFLUENZA A, B IDENTIFICATION, DFA	87253	$45.00
MDC0351A	MEASLES IDENTIFICATION, DFA	87253	$85.00

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Procedure No.	Procedure Name	CPT	Cost
MBS0243A	MUMPS IDENTIFICATION, DFA	87253	$85.00
MDE0362A	PARAINFLUENZA 1, 2, 3 IDENTIFICATION DFA	87253	$98.00
MBS0244A	PARAINFLUENZA 4 IDENFICATION DFA	87253	$80.00
MBS0245A	POLIOVIRUS TYPE SPECIFIC IDENTIFICATION, DFA	87253	$70.00
MDC0341A	RABIES IDENTIFICATION, HUMAN, DFA	87253	$40.00
MDC0350A	RSV IDENTIFICATION, DFA	87253	$75.00
MZZ0446A	RUBELLA IDENTIFICATION, DFA	87253	$75.00
MDD0356A	VIRAL, MOLECULAR SEQUENCING	83904	$125.00
MDE0365A	VIRUS DETECTION, HEMADSORPTION	87253	$41.00
MDC0346A	VIRUS ID, ENTERO, SERUM NEUT, CONFIRM	87253	$67.00
MZZ0442A	VIRUS ID, SERUM NEUT, ANTISERA POOL	87253	$40.00
MDC0343A	VIRUS ID, SERUM NEUT, INDIV. ANTISERA	87253	$45.00
MDC0353A	VIRUS ISOLATION, MOUSE INOCULATION	87250	$115.00
MDE0360A	VZV IDENTIFICATION, DFA	87253	$75.00
MDC0349A	VZV, SHELL VIAL, DFA	87254	$75.00
Virus: Virus isolation, comprehensive			
MBS0240A	ADENOVIRUS IDENTIFICATION, DFA	87253	$77.00
MDC0352A	CMV IDENTIFICATION, DFA	87253	$85.00
MDE0361A	CMV, SHELL VIAL, DFA	87254	$76.00
MDE0363A	CULTURE, VIRAL, CLINICAL	87252	$120.00
MDC0344A	CULTURE, VIRAL, SHELL VIAL	87254	$56.00
MAX0157A	ELECTRON MICROSOPY - OBSERVATION	88348	$340.00
MDE0367A	ELECTRON MICROSOPY - PHOTOGRAPHY	88348	$110.00
MAX0158A	EM, IMMUNE ELECTRON MICROSCOPY	88348	$356.00
MBS0241A	ENTEROVIRUS IDENTIFICATION, DFA	87253	$82.00
MDE0359A	ENTEROVIRUS SCREEN, DFA	87253	$77.00
MBM0222A	HSV 1, 2 IDENTIFICATION, DFA	87253	$75.00
MBS0242A	INFLUENZA A, B IDENTIFICATION, DFA	87253	$45.00
MDC0351A	MEASLES IDENTIFICATION, DFA	87253	$85.00
MBS0243A	MUMPS IDENTIFICATION, DFA	87253	$85.00
MDE0362A	PARAINFLUENZA 1, 2, 3 IDENTIFICATION DFA	87253	$98.00
MBS0244A	PARAINFLUENZA 4 IDENFICATION DFA	87253	$80.00
MBS0245A	POLIOVIRUS TYPE SPECIFIC IDENTIFICATION, DFA	87253	$70.00
MDC0341A	RABIES IDENTIFICATION, HUMAN, DFA	87253	$40.00
MDC0350A	RSV IDENTIFICATION, DFA	87253	$75.00
MZZ0446A	RUBELLA IDENTIFICATION, DFA	87253	$75.00
MDD0356A	VIRAL, MOLECULAR SEQUENCING	83904	$125.00
MDE0365A	VIRUS DETECTION, HEMADSORPTION	87253	$41.00
MDC0346A	VIRUS ID, ENTERO, SERUM NEUT, CONFIRM	87253	$67.00
MZZ0442A	VIRUS ID, SERUM NEUT, ANTISERA POOL	87253	$40.00
MDC0343A	VIRUS ID, SERUM NEUT, INDIV. ANTISERA	87253	$45.00
MDC0353A	VIRUS ISOLATION, MOUSE INOCULATION	87250	$115.00
MDE0360A	VZV IDENTIFICATION, DFA	87253	$75.00
MDC0349A	VZV, SHELL VIAL, DFA	87254	$75.00

Non-human

Bacteriology

Bioterrorism - from law enforcement agencies ONLY		
	BIOTERRORISM - FROM LAW ENFORCEMENT AGENCIES ONLY	$0.00
Botulism (C. botulinum)		
MAK0075A	CULTURE, BOTULINUM - FOOD	$130.00
Environmental: Swabs		
MZZ0161A	CULTURE, ENVIRONMENTAL SWAB	$25.00
Food: Bioterrorism - from law enforcement agencies ONLY		
	FOOD: BIOTERRORISM - FROM LAW ENFORCEMENT AGENCIES ONLY	$0.00
Food: Single organism		
MZZ0476A	FOOD ANALYSIS, BACILLIS	$56.00
MZZ0477A	FOOD ANALYSIS, C PERFRINGENS	$56.00
MZZ0478A	FOOD ANALYSIS, CAMPYLOBACTER	$56.00
MZZ0479A	FOOD ANALYSIS, ECOLI 0157	$56.00
MZZ0480A	FOOD ANALYSIS, LISTERIA	$56.00
MZZ0481A	FOOD ANALYSIS, SALMONELLA	$56.00
MZZ0482A	FOOD ANALYSIS, SHIGELLA	$56.00

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Procedure No.	Procedure Name	CPT	Cost
MZZ0483A	FOOD ANALYSIS, STAPHYLOCOCCUS		$56.00
MZZ0484A	FOOD ANALYSIS, STAPHYLOCOCCUS ENTEROTOXIN		$56.00
MZZ0488A	FOOD ANALYSIS, STX E COLI		$56.00
MZZ0485A	FOOD ANALYSIS, VIBRIO		$56.00
MZZ0486A	FOOD ANALYSIS, YEAST AND MOLD		$56.00
MZZ0487A	FOOD ANALYSIS, YERSINIA		$56.00
Food: Standard plate count			
MZZ0386A	COUNT, STANDARD PLATE, FOOD		$22.00
Food: Toxin			
MZZ0390A	FOOD TESTING - BOTULISM TOXIN TESTING		$56.00
MZZ0391A	FOOD TESTING - TOXIN (EX. STAPH)		$38.00
Legionella			
MAY0164A	CULTURE, LEGIONELLA		$75.00
Milk and dairy products: Dairy, cultured			
MDG0381Z	COUNT, COLIFORM		$44.00
MDG0382A	COUNT, STANDARD PLATE, MILK		$44.00
MZZ0384A	DAIRY PRODUCTS - CULTURES		$44.00
Milk and dairy products: Ice cream			
MDG0381Z	COUNT, COLIFORM		$44.00
MDG0382A	COUNT, STANDARD PLATE, MILK		$44.00
MZZ0384A	DAIRY PRODUCTS - CULTURES		$44.00
Milk and dairy products: Milk: Pasteurized milk panel			
MDG0381Z	COUNT, COLIFORM		$44.00
MDG0383A	GROWTH INHIBITOR, PROCESSED MILK		$119.00
Milk and dairy products: Milk: Raw milk panel			
MDG0381Z	COUNT, COLIFORM		$44.00
MZZ0401A	COUNT, SOMATIC CELL (DMSC)		$88.00
MZZ0402A	COUNT, SOMATIC CELL (OSCC)		$88.00
MDG0382A	COUNT, STANDARD PLATE, MILK		$44.00
MZZ0384A	DAIRY PRODUCTS - CULTURES		$44.00
MZZ0404A	GROWTH INHIBITOR, RAW MILK		$88.00
MZZ0403A	MILK & DAIRY TEST, AFLATOXIN		$90.00
MZZ0405A	MILK & DAIRY TEST, FREEZING POINT		$67.00
Milk and dairy products: Milk: Single test			
MDG0381Z	COUNT, COLIFORM		$44.00
MZZ0401A	COUNT, SOMATIC CELL (DMSC)		$88.00
MZZ0402A	COUNT, SOMATIC CELL (OSCC)		$88.00
MDG0382A	COUNT, STANDARD PLATE, MILK		$44.00
MZZ0384A	DAIRY PRODUCTS - CULTURES		$44.00
MZZ0404A	GROWTH INHIBITOR, RAW MILK		$88.00
MZZ0403A	MILK & DAIRY TEST, AFLATOXIN		$90.00
MZZ0405A	MILK & DAIRY TEST, FREEZING POINT		$67.00
Seafood: Brevitoxin			
MZZ0378A	TEST, SHELLFISH (BREVETOXIN)		$250.00
Seafood: Fecal coliform			
MZZ0418A	COUNT, E COLI MPN, SHELLFISH		$50.00
Seafood: Standard plate count			
MZZ0385A	COUNT, STANDARD PLATE, SHELLFISH		$44.00
MZZ0419A	SEAFOOD TESTING - STANDARD PLATE COUNT		$44.00
Seafood: Vibrios			
MZZ0420A	SEAFOOD TESTING - VIBRIOS		$75.00
Thermometer calibration			
MZZ0424A	THERMOMETER CALIBRATION		$25.00
Water: Bay waters			
MZZ0435A	WATER, BAY		$38.00
Water: Coliform: Coliform, total			
MZZ0439A	WATER, BOTTLE		$50.00
MZZ0440A	WATER, DAIRY		$50.00

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Procedure No.	Procedure Name	CPT	Cost
Water: Coliform: Fecal			
MZZ0438A	COUNT, MF FECAL COLIFORM		$38.00
MZZ0443A	WATER, MEMBRANE FILTRATION-FECAL		$38.00
Water: Potable water			
MZZ0441A	WATER, POTABLE		$28.00
Water: Reagent water suitability			
MZZ0414A	WATER TEST, REAGENT WATER SUITABILITY		$113.00
Entomology			
Mosquito identification: Adult, per carton			
MZZ0411A	ID, MOSQUITO SURVEILLANCE		$63.00
Mosquito identification: Larvae, per vial			
MZZ0154A	ID, MOSQUITO LARVAE		$42.00
Parasitology			
Water filter examination			
MZZ0436A	PARASITOLOGY EXAM, WATER FILTER, FA		$160.00
MZZ0437A	PARASITOLOGY EXAM, WATER FILTER, MPA		$160.00
Serology			
Arbovirus, equine, includes western equine encephalitis (WEE); eastern equine encephalitis (EEE); and west nile virus (WNV)			
MZZ0100A	ARBOVIRUS SEROLOGY - EQUINE (WEE, EEE, WNV)		$56.00
Hantavirus, animal			
MZZ0199A	HANTAVIRUS SEROLOGY - ANIMAL		$10.00
Plague (Yersinia), animal			
MCH0284A	SEROLOGY, YERSINIA PESTIS, ANIMAL, IHA		$10.00
Virology			
Arbovirus isolation: Equine			
MAN0091A	ARBOVIRUS IDENTIFICATION, DFA		$44.00
MAP0094A	ARBOVIRUS TYPING, MISC. DFA		$44.00
MAN0094A	CULTURE, ARBOVIRUS, EQUINE		$44.00
MAX0157A	ELECTRON MICROSOPY - OBSERVATION		$340.00
MDE0367A	ELECTRON MICROSOPY - PHOTOGRAPHY		$110.00
Arbovirus isolation: Mosquito			
MAN0091A	ARBOVIRUS IDENTIFICATION, DFA		$44.00
MAP0094A	ARBOVIRUS TYPING, MISC. DFA		$44.00
MAN0093A	CULTURE, ARBOVIRUS, MOSQUITO		$44.00
MAX0157A	ELECTRON MICROSOPY - OBSERVATION		$340.00
MDE0367A	ELECTRON MICROSOPY - PHOTOGRAPHY		$110.00
MDC0353A	VIRUS ISOLATION, MOUSE INOCULATION		$115.00
Arbovirus PCR: Avian			
MZZ0098A	ARBOVIRUS PCR - AVIAN		$150.00
Arbovirus PCR: Mosquito			
MZZ0099A	ARBOVIRUS PCR - MOSQUITO		$150.00
Rabies testing			
MCM0300A	RABIES DETECTION, DFA		$0.00

Quality Control

Non-human

Certification			
Fees for the Certification of Milk and Shellfish Laboratories:			
CZZ0004A	ANTIBIOTIC MILK LAB CERTIFICATION		$350.00
CZZ0002A	FULL SERVICE MILK LAB CERTIFICATION		$685.00
CZZ0003A	MILK INDUSTRY LAB CERTIFICATION		$525.00
CZZ0005A	MILK PROFICIENCY TEST CERTIFICATION		$375.00
CZZ0006A	RECERTIFICATION		$300.00
CZZ0001A	SHELLFISH LAB CERTIFICATION		$500.00

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Procedure No.	Procedure Name	CPT	Cost
CZZ0006A	SUPPLEMENTAL CERTIFICATION		$300.00

Specimen Handling Fees

Clinical specimens and environmental samples

MZZ0421A	SPECIMEN HANDLING FEE - CLINICAL AND ENVIRONMENTAL SAMPLES		$25.00

Pathogenic agents

MZZ0422A	SPECIMEN HANDLING FEE - PATHOGENIC AGENTS		$50.00

Lab Tests for Diseases/Agents

Biochemistry and Genetics - Clinical Chemistry Tests

Blood Lead

Method: Graphite Furnace Atomic Absorption Spectrophotometer

Reporting
Results Available: 2- 3 days after receipt of specimens
Contact #: (512) 458-7578 or (888) 963-7111 ext. 7578
Reference
Reference Range: <10.0 µg/dL
Diagnostic Information: Small amounts of blood lead can be damaging to the development of a child.

Note: Any screening Blood Lead Level (BLL) above 10.0 µg/dL must be confirmed with a venous sample.

Interpretation: Blood Lead 10- 14 µg/dL (Class II A)

- Test every 3 to 4 months until two consecutive tests are <10.0 µg/dL or three consecutive tests are <15 µg/dL

Blood Lead 15- 19 µg/dL (Class II B)

- Confirm capillary results with a venous blood specimen
- Conduct an environmental assessment interview (TDSHS form M-100)
- If two consecutive follow-up tests, 3 to 4 months apart remain in this range, the parents have been counseled, and the interview completed, proceed according to actions for 20-44 µg/dL. If a follow-up BLL is in this range at least 3 months after initial venous test or BLL's increase, a home visit may be indicated to assess the environment for lead contaminants. An environmental investigation is needed only when the interview and home visit have failed to identify the source of lead.

Blood Lead 20- 44 µg/dL (Class III)

- The repeat venous sample should be done within one week. If confirmed to be ≥ 20 µg/dL; conduct a complete medical evaluation: physical exam, including but not limited to growth assessment, blood pressure, hearing acuity, peripheral nerve function; developmental assessment; and laboratory assessment. Check for serum iron, iron-binding capacity, and ferritin should be measured.
- A blood lead ≥ 40 µg/dL should prompt a serum creatinine to assess renal function.

Blood Lead 45- 69 µg/dL (Class IV)

- Begin medical treatment and environmental assessment and remediation within 48 hours.
- Pharmacologic treatment is indicated and should be conducted under the guidance of a physician experienced in the treatment of lead poisoning.

Blood Lead ≥ 70 µg/dL (Class V)

- Considered a medical emergency. Medical treatment and environmental assessment/remediation must begin immediately.

Specimen/Supply Requirements

Specimen Collection: To avoid lead contamination, the patient and the person collecting the specimen, should wash hands and puncture site with soap and water before collection. Preferred Specimen: EDTA (Purple top tube) anticoagulated whole blood. Submit specimens in DSHS specified blood collection tubes (Capillary/Venous). Fill blood collection tube according to manufacturer stated fill volume.

Required Request Form: G-1B

Causes for Rejection: Clotting, Quantity Insufficient, Specimen Decomposition, Specimen not tested within 10 days

Availability: THSteps and Title V.

Specimen Submission

Shipping Requirements: Mail specimens the same day as collected; otherwise refrigerate. Avoid temperature extremes by dropping specimens off at the post office instead of using a drop box. Package specimens according to the guidelines for submission of laboratory specimens through the US Postal System.

Billing

CPT Code: 83655

Fees: $7.00

Blood Typing/Rh factor/Antibody Screen and ID

Test Includes: ABO type, Rh Factor, Antibody Screen and Antibody Identification

Method/Procedure: Antibody Screen and ID are performed using solid phase technology

Reporting

Results Available: 3 days after receipt of specimen

Contact #: (512) 458-7578 or (888) 963-7111 ext. 7578

Reference

Turnaround Time: 3 working days after receipt of specimen

Interpretation: Blood typing and antibody screening are available to maternity patients to help prevent hemolytic disease of the newborn (HDN). The severity of HDN ranges from mild anemia to stillbirth depending on how many red blood cells are destroyed and the ability of the fetus to compensate by increased production of new cells.

Diagnostic Information: Red blood cells can be classified as A, B, AB, or O according to the presence or absence of highly reactive antigens on the red cell surface. Of all the red blood cell antigens, these are the only ones for which the corresponding antibodies consistently and predictably exist in the blood of normal individuals. Red blood cells are classified as Rh positive or Rh negative according to the presence or absence of the D antigen. Detection of unexpected antibodies in the serum of a patient is accomplished by testing against selected red blood cells possessing between them the common inherited blood group antigens. Antibody identifications are performed on positive antibody screens. Titration studies are performed on any clinically significant antibody identified.

Specimen/Supply Requirements

Specimen Collection: Venipuncture using aseptic technique

Preferred Specimen: 7- 10 mL red top without gel separator

Required Request Form: G-1B Please include whether the patient has received a Rh_o(D) immunoglobulin injection within the past 6 months as well as the date of the injection and weeks gestation.

Causes for Rejection: Quantity insufficient, No Red Cells Received, Hemolysis

Availability: Maternity patients

Specimen Submission

Shipping Requirements: DSHS Laboratory must receive specimens within 24 hours from time of collection. Specimens not received at DSHS Laboratory within 24 hours should be stored at 1° - 10°C and shipped cold. Ship specimens overnight at ambient temperature. Specimens not received within 24 hours from time of collection must be shipped overnight with enough cold packs to maintain refrigerated temperature until arrival at DSHS Laboratory. Do not freeze. Please see the section on RHOGAM (HDN) Packing and Shipping Instructions.

Billing

CPT code: 86900, 86901, 86850, 86870, 86886

Fees: $32.00 up to $46.00 if Antibody Identification and Antibody Titer are performed as a result of a positive Antibody Screen.

Cholesterol/Lipid Profile

Test Includes: Lipid Profile includes total cholesterol, triglyceride, High Density Lipoproteins (HDL) and Low Density Lipoproteins (LDL)

Method/Procedure: Enzymatic measure using UV/Visual Spectrophotometry

Reporting

Results Available: 3 working days after receipt of specimen

Contact #: (512) 457-7578

Reference

Reference Range: Adults -	Children-
Cholesterol.....<200 mg/dL	Cholesterol.....<170 mg/dL
Triglyceride .....30- 190 mg/dL	Triglyceride.....30- 190 mg/dL
HDL Cholesterol..... >35 mg/dL	HDL Cholesterol.....>35 mg/dL
LDL Cholesterol.....<130 mg/dL	LDL Cholesterol.....<110 mg/dL

Diagnostic Information: Cholesterol measurements are used in the diagnosis of metabolic disorders involving lipids and lipoproteins. Triglyceride measurements are used in diagnosis and treatment of patients with diabetes mellitus, nephrosis, liver obstruction, other diseases involving lipid metabolism or various endocrine disorders. HDL cholesterol is inversely related to the risk of developing coronary artery disease. The higher the HDL cholesterol the less chance of developing coronary heart disease. LDL cholesterol is calculated using the Friedwald equation.

Specimen/Supply Requirements

Specimen Collection: Venipuncture using aseptic technique Preferred Specimen: Red top. Collect specimen for cholesterol or lipid profile in a red top tube. Remove serum from clot within 2 hours of collection. Transfer at least 1 mL of serum to another plastic transport tube and freeze. Plastic transport tube can be a plain blood collection tube.

Required Request Form: G-1B

Causes for Rejection: Hemolysis, Quantity Insufficient

Limitations: Lipid profile requires a fasting specimen THSteps non-fasting specimens receive a total cholesterol. Fee for Service non-fasting specimens receive a total cholesterol and an HDL cholesterol

Specimen Submission

Shipping Requirements: Ship specimens overnight with enough cold packs or dry ice to maintain specimens at proper temperature until arrival at DSHS Laboratory. On each G-1B submission form, record the date and time that specimens were removed from the freezer for shipment. Batching of specimens for shipment is recommended. See pgs. 59-62 for detailed collection and packaging info.

Billing

CPT Code: 80061

Fees: $21.00.

Diabetes/Glucose

Method/Procedure: Enzymatic measure using UV/Visual Spectrophotometry

Reporting

Results Available: 3 working days after receipt of specimen

Contact #: (512) 458-7578 or (888) 963-7111 ext. 7578

Reference

Reference Range:	3-Hr GTT:
Random:.....50- 130 mg/dL	Any 2 of the following greater than expected
	Fasting:.....<105 mg/dL
1-Hr. GTT: .....<140 mg/dL	1-Hr:.....<190 mg/dL
	2-Hr:.....<165 mg/dL
2-Hr PP:.....<120 mg/dL	3-Hr:.....<145 mg/dL

Diagnostic Information: Glucose measurements are used in the diagnosis and treatment of carbohydrate metabolism disorders including diabetes mellitus, hypoglycemia, gestational diabetes and pancreatic islet cell carcinoma. Glucose concentrations are measured using a timed endpoint method and hexokinase reagent.

Specimen/Supply Requirements

Specimen Collection: Venipuncture using aseptic technique. Collect specimens for glucose testing in gray top tubes containing sodium fluoride/potassium oxalate. Plasma must be separated from red blood cells within 24 hours from time of collection. Transfer plasma from red cells and place in another plastic transport container and freeze.

Preferred Specimen: Gray top containing Sodium Fluoride/Potassium Oxalate

Required Request Form: G-1B

Causes for Rejection: Not collected in Sodium Fluoride/Potassium Oxalate blood collection tube, Hemolysis, Quantity Insufficient

Specimen Submission

Shipping Requirements: Ship specimens overnight with enough cold packs or dry ice to maintain specimens at proper temperature until arrival at DSHS Laboratory. On each G-1B submission form, record the date and time that specimens were removed from the freezer for shipment. Batching of specimens for shipment is recommended. See pgs. 59-62 for detailed collection and packaging info.

Billing

CPT Code: 82947, 82952 for each additional tolerance test

Fees: $5.00 up to $19.00 for 3-Hour glucose tolerance test
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Hemoglobin Electrophoresis

(Also known as Hemoglobinopathy, Hemoglobin Type, or Sickle Cell Screening)

Method: Isoelectric focusing

Reporting

Results Available: 2-3 days after receipt

Contact #: (512) 458-7578 or (888) 963-7111 ext. 7661

Reference

Diagnostic Information: Heel stick, finger stick, or venous blood dropped on filter paper is screened by the use of isoelectric focusing for clinically significant hemoglobinopathies and thalassemias, including sickle cell anemia.

Turnaround Time: 2-3 days after receipt

Reference/Expected Range: Birth to ~6 months = F,A,A
~6 months to 1 year = A,A,F
Over 1 year = A,A

Interpretation: Results for Hemoglobin Electrophoresis that are outside of the Expected Range should be confirmed with a second specimen at a different laboratory.

Specimen/Supply Requirements

Specimen Collection: Heel stick, finger stick, or venous blood.
Required Specimen: Dried filter paper blood spots
Volume/Amount Required: 2-3 dried blood spots

Specimen Collection Card: The required specimen, effective **November 1, 2007**, is the Texas DSHS Snap-Apart filter paper card. The Snap-Apart filter paper card may be ordered from Container Prep at 512-458-7661 and is only valid for Hemoglobin Electrophoresis testing.

Specimen Collection Card Shelf Life: The expiration date is printed on the flap near the filter paper collection area. Do Not Use Expired Cards.

Specimen Collection Card Storage (prior to use): Store in original wrapping and stack in a manner (vertically) to avoid compression of the filter paper.

Specimen Collection Instructions:

- Wear powder-free disposable gloves when handling collection card and collecting sample.
- Never touch the specimen collection area.
- Write in name of patient and date of collection where indicated.
- To open the card, grasp thumb notches printed on the card between thumb and forefinger of each hand and snap card apart. The instruction sheet will detach from the card. If the card does not “snap apart,” it may be separated by tearing at the perforated lines.
- Holding cover away from specimen collection paper, fill at least 2-3 circles with blood following standard procedures.
- Holding card at thumb notch near collection area, slightly bend collection card away from cover to allow air to flow beneath the collection paper and place card on flat surface to dry.
- When sample has dried, fold cover at score line, over sample, and tuck into flap.

- Complete G-1B form and submit with specimen.
- Ship Hemoglobin Electrophoresis filter paper specimens in THSteps (Texas Health Steps) mailing containers with other specimens for THSteps testing. Specimens are to be shipped to DSHS at ambient temperature. Do not batch specimens; mail specimens the day of collection or the day after collection.

Storage Instructions: Allow specimen to air-dry completely at ambient temperature before mailing; mail specimen as soon as possible.

Causes for Rejection: The Hemoglobin Electrophoresis specimen has to be received by the laboratory by the 13th day after collection on a ***non-expired form*** and should have at least 2-3 adequately filled circles, patient name/date of collection, and a complete and accurate G-1B request form.

Additional Causes for Rejection include:

- Insufficient blood has been submitted,
- Specimen is contaminated or discolored,
- Missing or invalid patient demographic information,
- Specimen is too old upon receipt (received 14 or more days following collection),
- No blood samples received with request form,
- Improper specimen submitted (i.e., EDTA whole blood),
- Serum separation due to improper drying or collection, or
- Laboratory accident.

Specimen Submission

Required Request Form: G-1B

Shipping Requirements: Mail specimens the day of collection or the next day. U.S. Postal regulations require double containment of dried blood filter paper specimens. Ensure specimens are thoroughly dried prior to placing in mailing container.

1st containment: Use the attached wrap-around cover with printed universal biohazard symbol.

2nd containment: Use THSteps mailing container for shipping Hemoglobin Electrophoresis specimens.

Notes: Ship specimens at room temperature within 24 hours of specimen collection. Avoid temperatures greater than 100 degrees F.

Billing

CPT Code: 83020

Fees: $6.00

RPR Card Test

Method: 18 mm RPR Card Test (agglutination)

Reporting

Results Available: 2- 3 days after receipt of specimens

Contact #: (512) 458-7578 or (888) 963-7111 ext. 7578

Reference

Reference Range: Nonreactive

Diagnostic Information: The rapid plasma reagin (RPR) card test is a macroscopic, non-treponemal flocculation test for the qualitative and semi-qualitative serological detection of syphilis. Nontreponemal tests for syphilis become reactive 4-6 weeks after infection with titers peaking during secondary to early latent stage. Treatment in the primary or secondary stages usually results in a rapid decline in titer. Treatment given in latent or late stages has less effect on antibody titers and the test may remain reactive at low titers indefinitely. The reagin-type antibody binds with the antigen that is composed of a complex of cardiolipin, lecithin and cholesterol particles with activated charcoal; the result of this antigen-antibody reaction is a macroscopic flocculation that shows up as black clumps against the white card. The RPR-Card test is a screening test and without some other evidence for the diagnosis of syphilis, a reactive non-treponemal test does not confirm Treponema pallidum infection. The RPR-Card test does not distinguish between syphilis and other treponematoses such as yaws, pinta and bejel. The semi-qualitative RPR-Card Test may be used as a method to follow response to treatment. A four-fold or greater drop in titer between pre- and post-treatment specimens is indicative of response to therapy. Test is performed daily.

Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.

Interpretation: Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.

Specimen/Supply Requirements

Specimen Collection: Venipuncture using aseptic technique

Specimens collected in a red-top blood collection tube should be centrifuged within two hours of collection to separate the serum from the red blood cells (clot). Pipette serum from the clot, transferring the serum to the serum transport tube. Keep specimen cold until shipping. Discard red top tube.
or
Specimens collected in a serum separator tube with clot activator and gel (SST) should be centrifuged within two hours of collection to separate the serum from the red blood cells (clot). Keep specimens cold until shipping.

Serum specimens may be frozen with the exception of the serum separator tubes (SST). **Do not freeze SST.**

Specimen Type: Serum

Volume/Amount Required: minimum 1 mL of serum

Preferred Specimen: Single Serum
Collection/Preservation: Red top tube or Tiger/Gold top serum separator tube with clot activator and gel (SST)
Storage Instructions: Separated serum (serum transport tube with serum only and SST) may be held at 2-8°C (cold); or (serum transport tube with serum only) may be held at -20°C (frozen)
Causes for Rejection: Gross hemolysis, quantity insufficient of serum for testing, whole blood specimen submitted, specimen not received, specimen delayed in transit, specimen not received cold, specimen collected in expired tube.
Shipping Requirements: Package serum transport tube/SST in cold shipping box with sufficient cold packs to ensure specimen arrives cold within 5 days from the date of collection. Ship specimens overnight via UPS next day air. On each G-1B submission form, record the date and time that specimens were removed from the refrigerator/freezer for shipment. Do not ship specimens on Friday, Saturday or the day before a federally observed holiday.
Transport Temperature: Serum transport tube with serum only and SST (cold); or serum transport tube with serum only (frozen).
Required Request Form: G-1B
Availability: THSteps and Title V. Test performed daily.
Billing
CPT Code: 86592
Fees: $4.50

Total Hemoglobin

Method: SLS-methemoglobin (SLS-HB) for Total Hemoglobin

Reporting

Results Available: 2-3 days after receipt of specimen

Contact #: (512) 458-7578 or (888) 963-7111 ext. 7578

Reference

Diagnostic Information: Whole blood specimens are screened for hemoglobin concentration using a photometric method. Decreased levels of hemoglobin can indicate iron-deficiency and other forms of chronic anemia.

Turnaround Time: 2-3 days after receipt of specimen

Reference Range: 11-16 ug/dL

Specimen/ Supply Requirements

Specimen Collection: EDTA (Purple top tube) anticoagulated whole blood. Submit specimens in DSHS specified blood collection tubes (Capillary/Venous). Fill blood collection tube according to manufacturer stated fill volume.

Storage Instructions: Room temperature, may be refrigerated to avoid heat and freezing temperatures.

Causes for Rejection: Specimen decomposition, clotted, insufficient quantity, specimen not tested within 10 days.

Specimen Submission

Required Request Form: G-1B

Shipping Requirements: Mail specimens the same day as collected; otherwise refrigerate at 4° C. To avoid temperature extremes, drop specimens off at the post office instead of using a drop box. Package specimens according to the guidelines for submission of laboratory specimens through the U.S. Postal System.

Billing

CPT Code: 85018

Fees: $4.00

Triple Screen Testing

Test Includes: Chemiliminescence for AFP (alphafetoprotein), hCG (human chorionic gonadotropin), uE3 (unconjugated estriol)

Reporting

Results Available: 3 days

Contact #s: (800) 468-4363, (512) 458-7138, Fax: (512) 458-7139

Reference

Diagnostic Information: The Triple Screen uses AFP, hCG, and uE3 test results plus maternal age, weight, race and diabetic status. A computer program is used to calculate patient-specific risk factors for Neural Tube Defects, Down Syndrome and Trisomy 18.

Limitations: All information on the G-1C form must be provided. A delay in the reporting of a test result may occur if the proper information is not accurately provided.

Specimen/Supply Requirements

Specimen Collection: 2 mL serum must be collected during the 15th to 20th week of pregnancy; 16-18 weeks of gestational age preferred.

Storage Instructions: Spin blood specimen, separate serum, and freeze. Call contact # for supplies.

Causes for Rejection: Any specimen other than serum, specimen not tested within 21 days.

Sample Test Kit: Special blue top plastic tube provided by Prenatal Testing Section.

Specimen Submission

Shipping Requirements: Ship specimens overnight except on Friday and before federal holidays.

Required Request Form: G-1C

Billing

CPT Code: 82105, 84702, 82677

Fees: $45.00

Newborn Screening Tests

Newborn Screening Panel

Test Includes:

Amino acid disorders:
argininosuccinic acidemia (ASA), citrullinemia (CIT), homocystinuria (HCY), maple syrup urine disease (MSUD), phenylketonuria (PKU) and tyrosinemia type I (TYR-I)
Fatty acid disorders:
medium chain acyl-coenzyme A dehydrogenase deficiency (MCAD), carnitine uptake defect (CUD), long-chain L-3- hydroxyacyl-coenzyme A dehydrogenase deficiency (LCHAD), trifunctional protein deficiency (TFP) and very long-chain acyl-coenzyme A dehydrogenase deficiency (VLCAD)
Organic acid disorders:
3-methylcrotonyl-coenzyme A carboxylase deficiency (3-MCC), beta-ketothiolase deficiency (BKT), glutaric acidemia type I (GA-I), 3-hydroxy 3-methylglutaric aciduria (HMG), isovaleric acidemia (IVA), methylmalonic acidemia (Cbl A,B form), methylmalonic acidemia (MUT), multiple carboxylase deficiency (MCD) and propionic acidemia (PROP)
Galactosemia (GALT)
Biotinidase deficiency (BIOT)
Congenital hypothyroidism (CH)
Congenital adrenal hyperplasia (CAH)
Cystic fibrosis (CF)
Hemoglobinopathies: sickle cell anemia (Hb S/S), sickle beta thalassemia (Hb S/A), and sickle-hemoglobin C disease (Hb S/C)

Reporting

Results Available: Preliminary results available within 3-4 working days of receipt in the laboratory.

Contact: Laboratory Reporting Section
Telephone: (512) 458-7578 or Fax: (512) 458-7533

Reference

Method/Procedure:

Tandem Mass Spectrometry to detect: Amino Acid Disorders, Fatty Acid Disorders, and Organic Acid Disorders

Immunofluorometric Microtiter Assays to detect: Congenital Hypothyroidism, Congenital Adrenal Hyperplasia, and Immunoreactive Trypsinogen (IRT) for Cystic Fibrosis
(Note: IRT testing must be completed within 14 days of the date of specimen collection.)

Flourometric Microtiter Assay to detect: Galactosemia

Colorimetric Microtiter Assay to detect: Biotinidase Deficiency

Isoelectric Focusing (IEF) and High Pressure Liquid Chromatography (HPLC) to detect: Abnormal Hemoglobinopathies

Reference Range: Normal

Limitations:

- Transfusion may alter all Newborn Screening results.

- Total Parenteral Nutrition (given to sick or premature infants) may cause inaccurate test results.
- Antibiotics (given to sick or premature infants) may cause inaccurate test results.
- EDTA and Citrate anticoagulants must not be used during the collection of the specimen. Anticoagulants can cause inaccurate test results.
- Exposure to heat and humidity can cause inaccurate test results.
- Hematocrit levels, prematurity, and age of the infant may affect the interpretation of results.
- Inaccurate and incomplete information may affect the interpretation of results.
- Do not use chlorhexidine gluconate (found in Chlorascrub swabs, etc.) as this may cause inaccurate test results.

Interpretation: Included in the Result Report. Example of the NBS Result Report with guidance: http://www.dshs.state.tx.us/lab/nbs_mailer_faqs.shtm

Diagnostic Information:

Amino Acid, Fatty Acid, and Organic Acid Disorders
All specimens are screened to detect elevated concentrations of amino acids, free carnitines, and acylcarnitines and to evaluate their relationship with each other. These measurements provide analyte concentration profiles that may aid in the detection of several metabolic disorders. Amino acid markers are typically used to identify Amino Acid Disorders, while free carnitine and acylcarnitine markers help identify Fatty Acid Disorders and Organic Acid Disorders.

Galactosemia
All specimens are screened to detect decreased levels of galactose-1-phosphate uridyl transferase (GALT) as an indicator of galactosemia. Abnormal GALT specimens are also tested to identify common galactosemia-related mutations. See "Galactosemia Testing (DNA Mutation Panel)" for additional information.

Congenital Hypothyroidism
All specimens are screened to detect decreased thyroxine (T4) concentrations as an index of thyroid function. Specimens screened for T4 that meet certain retest requirements are also screened to detect elevated concentrations of thyroid stimulating hormone (TSH) (approximately 10% of daily run).

Congenital Adrenal Hyperplasia
All specimens are screened to detect elevated concentrations of 17-hydroxy progesterone (17-OHP) which could signify congenital adrenal hyperplasia (CAH).

Cystic Fibrosis
All specimens are screened to detect an elevated concentration of Immunoreactive Trypsinogen (IRT) as a preliminary indicator of Cystic Fibrosis. A targeted mutation panel is used to identify 40 common CF-related mutations and 2 polymorphisms. See "Cystic Fibrosis Testing (CFTR Mutational Panel)" for additional information. First screens with abnormal IRT require analysis of a second screen to test for persistent IRT elevation. Second screens with abnormal IRT are tested by the targeted mutation panel. The combination of the IRT levels on both first and second screen specimens and the genotype from the mutation panel is used to determine the significance of screening results.

Biotinidase Deficiency
All specimens are screened to detect the presence or absence of biotinidase (BIOT) activity as an

indicator of biotinidase deficiency.

Hemoglobinopathies
All specimens are screened to detect clinically significant hemoglobinopathies and thalassemias including sickle cell disease and sickle beta thalassemia. Specimens testing positive for certain hemoglobinopathies are then tested to identify specific mutations for hemoglobin types S, C, E, D, O-Arab and two beta-thalassemias by polymerase chain reaction and restriction fragment length polymorphism. See "Hemoglobinopathy Testing (DNA Confirmation)" for additional information.

Specimen/Supply Requirements

Specimen Collection: Heel Stick between 24-48 hours and 1-2 weeks of age.
Required Specimen: Dried Filter Paper Blood Spots
Volume/Amount Required: 5 dried blood spots

Specimen Collection Card:
NBS3 (Medicaid/CHIP/Charity form) or NBS4 (Paid form)

Specimen Collection Card Shelf Life:
The expiration date is printed on the filter paper collection area, the collection instruction sheet and the patient demographic information pages. Do Not Use Expired Cards.

Specimen Collection Card Storage (prior to use):
Store in original wrapping and stack in a manner (vertically) to avoid compression of the filter paper.

Causes for Rejection: The newborn screening specimen must be received by the laboratory on a ***non-expired form*** by the 13th day after collection, should have at least 3 adequately filled circles, and complete and accurate demographic information.

Additional Causes for Rejection include:

- insufficient blood has been submitted
- blood did not completely soak through the filter paper
- improper capillary use
- specimen is contaminated or discolored
- specimen is caked, clotted or layered on the filter paper
- missing or invalid patient demographic information
- form serial number does not match that of the blood circles
- specimen is too old upon receipt (received 14 or more days following collection)
- no blood samples received with request form
- specimen submitted on improper collection form
- serum separation from improper drying or collection
- specimen torn or damaged in transit
- laboratory accident (repeat screen needed)
- received in a hermetically sealed container
- too old to test (Cystic Fibrosis IRT tested 15 or more days following collection)
- Information on demographic form does not match electronically submitted information

Specimen Submission

Completely fill in all patient demographic information on the Specimen Collection Card (NBS3 or

NBS4). Note: Mother's last name, date of birth, date of specimen collection and birth weight are required fields.

Click here for detailed information and guidance on NBS specimen collection

Lay specimens flat and air dry at room temperature for a minimum of 3-4 hours before packaging for shipment. Ship appropriately to expedite receipt of specimens by the laboratory.

Shipping Requirements: U.S. Postal regulations require: ***Double*** containment of dried blood filter paper specimens. Ensure specimens are thoroughly dried prior to placing in envelope.

1st containment: Use the attached wrap-around cover with printed universal biohazard symbol. ***Do not put biohazard labels on outside of envelope!***

2nd containment: Use Special Envelope designed for shipping of Newborn Screening specimens. ***Do not put specimens in plastic bags!***

Notes: If the wrap-around cover has been removed, rotate each specimen 180° such that the blood specimens do not touch when placing more that one specimen in an envelope. Ship specimens at room temperature within 24 hours of specimen collection. Avoid temperatures greater than 100°F.

Billing	
CPT Codes: 82261, 82776, 83020, 83498, 84437, 83520, 83788 (the cumulative Medicaid allowable rate for these CPT codes is significantly more than the cost charged by DSHS for performing the newborn screening)	**Fees:** $34.50 (NBS4)

Cystic Fibrosis Testing (CFTR Mutation Panel)

Test Includes: Cystic fibrosis transmembrane conductance regulator (CFTR) mutation panel

Reporting

Results Available: Within 5 days of receipt receipt

Turnaround Time: 3 working days

Contact: (512) 458-7158

Reference

Method/Procedure: Multiplex polymerase chain reactions and fluorescent signal detection

Limitations: Molecular based testing is highly accurate. However, rare diagnostic errors may occur. Errors in the interpretation of results may occur if information provided is inaccurate or incomplete.

Interpretation: Available on the result report.

Diagnostic Information: The Cystic Fibrosis DNA testing is performed in support of the Newborn Screening Program at DSHS and for other individuals. Forty mutations and 2 polymorphisms are currently included in the panel (http://www.dshs.state.tx.us/newborn/pdf/CFTR%20InPlex%2040%20Mutation%20Panel.pdf). The mutation detection rate is estimated to be 38.7-89.12% depending on the patient's ethnicity. The residual risk of carrying a CFTR mutation not included on the panel is approximately 0.4-0.9% across most ethnic groups. Test results should not be used as a diagnostic test but should be interpreted in the context of clinical findings, family history, and other laboratory data.

Specimen/Supply Requirements

Specimen Collection: Heel Stick or Venipuncture

Required Specimen: Dried filter paper blood spots or EDTA anticoagulated (purple top tube) whole blood

Volume/Amount Required: One ½ inch dried filter paper blood spot or 1mL whole blood

Required Request Form: G-1B (required for non-newborn screening specimens only). For an example and ordering information visit: http://www.dshs.state.tx.us/lab/MRS_forms.shtm#Microbiological

Causes for Rejection include:

- Coagulated blood or insufficient amount of blood
- Patient information incomplete or invalid
- Patient name on specimen does not match name on request form

Specimen Submission

For instructions on how to collect a specimen: http://www.dshs.state.tx.us/newborn/spec_col.shtm

Collection tips for venupuncture: http://www.dshs.state.tx.us/lab/cc_spec-col.shtm

Instructions on how to complete a G-1B form: http://www.dshs.state.tx.us/lab/mrsG1Binstructions.shtm

Shipping Requirements:

Dried filter paper blood specimens shipping requirement:

- US Postal regulations require ***Double*** containment:
  - 1st containment: Cover the dried blood spots with the attached flap.
  - 2nd containment: Use Special Envelope designed for shipping of Newborn Screening specimen.
- If placing more that one specimen in an envelope, rotate each specimen 180° such that the blood specimens do not touch.
- Ship specimens at room temperature within 24 hours of specimen collection. Avoid temperatures greater than 100°F. Specimens must be received within 4 months from the date of collection.

Whole blood specimen shipping requirements:

- Refrigerate sample until shipment.
- Whole blood specimens must be shipped overnight at room temperature or refrigerated and received within 7 days of collection.
- U.S. Postal regulations require ***Triple*** containment:
  See Instructions on how to triple contain a specimen for shipping:
  http://www.dshs.state.tx.us/lab/MRS_shipping.shtm#Postal

Billing	
CPT Code: 83890, 83892, 83896, 83900, 83901, 83908, 83912 modifier 8A	**Fees:** A fee is charged to submitters for non-Medicaid and non-Title V patients.

Galactosemia Testing (DNA Mutation Panel)

Test Includes: Galactose-1-phosphate uridyl transferase (GALT) mutation panel

Reporting

Results Available: Within 5 days of receipt in the DNA laboratory

Turnaround Time: 3 working days

Contact: (512) 458-7158

Reference

Method/Procedure: Amplification Refractory Mutation System-Polymerase Chain Reaction (ARMS-PCR)

Limitations: Molecular based testing is highly accurate. However, rare diagnostic errors may occur. Errors in the interpretation of results may occur if information provided is inaccurate or incomplete.

Interpretation: Available on the result report.

Diagnostic Information: The Galactosemia DNA testing is performed in support of the Newborn Screening Program at DSHS and for other individuals. Four mutations/variants are currently included in the panel: Q188R, S135L, K285N, and N314D. These common mutations and frequent variants account for approximately 70% of the galactosemia alleles in the US population. Test results should not be used as a diagnostic test but should be interpreted in the context of clinical findings, family history, and other laboratory data.

Specimen/Supply Requirements

Specimen Collection: Heel Stick or Venipuncture

Required Specimen: Dried filter paper blood spots or EDTA anticoagulated (purple top tube) whole blood

Volume/Amount Required: One ½ inch dried filter paper blood spot or 1mL whole blood

Required Request Form: G-1B (required for non-newborn screening specimens only). For an example and ordering information visit:
http://www.dshs.state.tx.us/lab/MRS_forms.shtm#Microbiological

Causes for Rejection include:

- Coagulated blood or insufficient amount of blood
- Patient information incomplete or invalid
- Patient name on specimen does not match name on request form

Specimen Submission

For instructions on how to collect a specimen: http://www.dshs.state.tx.us/newborn/spec_col.shtm

Collection tips for venupuncture: http://www.dshs.state.tx.us/lab/cc_spec-col.shtm

Instructions on how to complete a G-1B form:
http://www.dshs.state.tx.us/lab/mrsG1Binstructions.shtm

Shipping Requirements:

Dried filter paper blood specimens shipping requirement:

- US Postal regulations require ***Double*** containment:
  - 1st containment: Cover the dried blood spots with the attached flap.
  - 2nd containment: Use Special Envelope designed for shipping of Newborn Screening specimen.
- If placing more that one specimen in an envelope, rotate each specimen 180° such that the blood specimens do not touch.
- Ship specimens at room temperature within 24 hours of specimen collection. Avoid temperatures greater than 100°F. Specimens must be received within 4 months from the date of collection.

Whole blood specimen shipping requirements:

- Refrigerate sample until shipment.
- Whole blood specimens must be shipped overnight at room temperature or refrigerated and received within 7 days of collection.
- U.S. Postal regulations require ***Triple*** containment:
  See Instructions on how to triple contain a specimen for shipping:
  http://www.dshs.state.tx.us/lab/MRS_shipping.shtm#Postal

Billing	
CPT Code: 83890, 83894, 83900, 83912	**Fees:** A fee is charged to submitters for non-Medicaid and non-Title V patients.

Hemoglobinopathy Testing (DNA Confirmation)

Test Includes: Hemoglobin S, C, D-Los Angeles, E, and O-Arab, two β-thalassemia mutations (-29, A→G and –88, C→T), partial sequencing of the β-Globin gene to identify additional mutations

Reporting

Results Available: Within 1-3 weeks of receipt

Turnaround Time: 4-9 working days

Contact: (512) 458-7158

Reference

Method/Procedure: Polymerase Chain Reaction - Restriction Fragment Length Polymorphism (PCR-RFLP), DNA Sequencing

Limitations: Molecular based testing is highly accurate. However, rare diagnostic errors may occur. Errors in the interpretation of results may occur if information provided is inaccurate or incomplete.

Interpretation: Available on the result report.

Diagnostic Information: The hemoglobinopathy confirmatory DNA testing is performed in support of the Newborn Screening Program at TDSHS and for other individuals. Mutations for Hemoglobins S, C, D, E, and O-Arab, and two common beta-thalassemia point mutations are identified by polymerase chain reaction and restriction fragment length polymorphism. Partial sequencing of the β-Globin gene is used for identification of other mutations. Test results should not be used as a diagnostic test but should be interpreted in the context of clinical findings, family history, and other laboratory data.

Specimen/Supply Requirements

Specimen Collection: Heel Stick or Venipuncture

Required Specimen: Dried filter paper blood spots or EDTA anticoagulated (purple top tube) whole blood

Volume/Amount Required: One ½ inch dried filter paper blood spot or 1mL whole blood

Required Request Form: G-1B (required for non-newborn screening specimens only). To view example and order form visit: http://www.dshs.state.tx.us/lab/MRS_forms.shtm#Microbiological

Causes for Rejection include:

- Coagulated blood or insufficient amount of blood
- Patient information incomplete or invalid
- Patient name on specimen does not match name on request form

Specimen Submission

For instructions on how to collect a specimen: http://www.dshs.state.tx.us/newborn/spec_col.shtm

Collection tips for venupuncture: http://www.dshs.state.tx.us/lab/cc_spec-col.shtm

Instructions on how to complete a G-1B form:
http://www.dshs.state.tx.us/lab/mrsG1Binstructions.shtm

Shipping Requirements:

Dried filter paper blood specimens shipping requirement:

- US Postal regulations require ***Double*** containment:

  1st containment: Cover the dried blood spots with the attached flap.
  2nd containment: Use Special Envelope designed for shipping of Newborn Screening specimen.

- If placing more that one specimen in an envelope, rotate each specimen 180° such that the blood specimens do not touch.
- Ship specimens at room temperature within 24 hours of specimen collection. Avoid temperatures greater than 100°F. Specimens must be received within 4 months from the date of collection.

Whole blood specimen shipping requirements:

- Refrigerate sample until shipment.
- Whole blood specimens must be shipped overnight at room temperature or refrigerated and received within 7 days of collection.
- U.S. Postal regulations require ***Triple*** containment:
  See Instructions on how to triple contain a specimen for shipping:
  http://www.dshs.state.tx.us/lab/MRS_shipping.shtm#Postal

Billing	
CPT Code: 83890, 83892, 83894, 83898, 83912	**Fees:** A fee is charged to submitters for non-Medicaid and non-Title V patients.

Phenylketonuria (PKU) - DNA Confirmation

Test Includes: Mutational analysis of the 13 exons and flanking regions of phenylalanine hydroxylase gene

Reporting

Results Available: Within 6 weeks of receipt

Turnaround Time: 30 working days

Contact: (512) 458-7158

Reference

Method/Procedure: Polymerase Chain Reaction and DNA Sequencing

Limitations: Molecular based testing is highly accurate. However, rare diagnostic errors may occur. Errors in the interpretation of results may occur if information provided is inaccurate or incomplete.

Interpretation: Available on the result report.

Diagnostic Information: Mutational analysis is carried out by automated DNA sequencing of the phenylalanine hydroxylase gene. Of the >500 known mutations in this gene, approximately 95% can be detected using this methodology. Test results should not be used as a diagnostic test but should be interpreted in the context of clinical findings, family history, and other laboratory data.

Specimen/Supply Requirements

Specimen Collection: Heel Stick or Venipuncture

Required Specimen: Dried filter paper blood spots or EDTA anticoagulated (purple top tube) whole blood

Volume/Amount Required: One ½ inch dried filter paper blood spot or 1mL whole blood

Required Request Form: G-1B. For an example and ordering information visit: http://www.dshs.state.tx.us/lab/MRS_forms.shtm#Microbiological

Causes for Rejection include:

- Coagulated blood or insufficient amount of blood
- Patient information incomplete or invalid
- Patient name on specimen does not match name on request form

Specimen Submission

For instructions on how to collect a specimen: http://www.dshs.state.tx.us/newborn/spec_col.shtm

Collection tips for venupuncture: http://www.dshs.state.tx.us/lab/cc_spec-col.shtm

Instructions on how to complete a G-1B form: http://www.dshs.state.tx.us/lab/mrsG1Binstructions.shtm

Shipping Requirements:

Dried filter paper blood specimens shipping requirement:

- US Postal regulations require ***Double*** containment:

  1st containment: Cover the dried blood spots with the attached flap.
  2nd containment: Use Special Envelope designed for shipping of Newborn Screening specimen.

- If placing more that one specimen in an envelope, rotate each specimen 180° such that the blood specimens do not touch.
- Ship specimens at room temperature within 24 hours of specimen collection. Avoid temperatures greater than 100°F. Specimens must be received within 4 months from the date of collection.

Whole blood specimen shipping requirements:

- Refrigerate sample until shipment.
- Whole blood specimens must be shipped overnight at room temperature or refrigerated and received within 7 days of collection.
- U.S. Postal regulations require ***Triple*** containment:
  See Instructions on how to triple contain a specimen for shipping:
  http://www.dshs.state.tx.us/lab/MRS_shipping.shtm#Postal

Billing	
CPT Code: 83890, 83891, 83894, 83898, 83904, 83912	**Fees:** A fee is charged to submitters for non-Medicaid and non-Title V patients.

Phenylketonuria (PKU) - Dietary Monitoring

Test Includes: Phenylketonuria (PKU) - Dietary Monitoring
(including phenylalanine/tyrosine ratio)

Reporting

Results Available: Within 2-3 working days after receipt of specimen

Contact: Laboratory Reporting Section (512) 458-7578

Reference

Method/Procedure: Tandem Mass Spectrometry

Limitations: Missing or invalid patient demographic information may affect the interpretation of results

Interpretation: See result report.

Diagnostic Information: Phenylketonuria (PKU) is caused by the body's inability to breakdown the amino acid phenylalanine. Specimens for PKU monitoring are screened by Tandem Mass Spectrometry to detect elevated concentrations and ratios of the amino acids phenylalanine and tyrosine.

Specimen/Supply Requirements

Specimen Collection: Heel Stick or Fingerstick collected on filter paper.

Volume/Amount Required: Two completely filled ½ inch dried blood filter paper spots.

Required Supplies:

PKU Filter Paper Kit:
Dried Blood Spot Specimen Collection Card

Specimen Collection Card Shelf Life:
The expiration date is printed on the filter paper collection area, the collection instruction sheet and the patient demographic information pages. ***Do Not Use Expired Cards!***

Specimen Collection Card Storage (prior to use):
Store in original wrapping and stack in a manner (vertically) to avoid compression of the filter paper.

To Order Forms and Supplies:
Call Laboratory Supply: (512) 458-7661
or Fax: (512) 458-7672

Required Request Form: G-1B

Causes for Rejection: The newborn screening specimen has to be received on ***non-expired forms*** by the laboratory by the 21st day after collection, should have at least 2 completely filled circles, and complete and accurate demographic information.

Additional Causes for Rejection Include:

- insufficient blood has been submitted
- blood did not completely soak through the filter paper
- improper capillary use
- specimen is contaminated or discolored
- specimen is caked, clotted or layered on the filter paper
- missing or invalid patient demographic information
- specimen is too old upon receipt (received 21 or more days following collection)
- no blood samples received with request form
- specimen submitted on improper collection form
- serum separation from improper drying or collection
- specimen torn or damaged in transit
- laboratory accident (repeat screen needed)

Specimen Submission

- Completely fill in all patient demographic information on the Required Request Form (G-1B).

- Important Patient Demographic Information: Patient first and last name, date of specimen collection, and date of birth.

Dried Blood Spot Specimen Collection:
- To view a specimen collection poster click: http://www.dshs.state.tx.us/newborn/pdf/specimen.pdf

Specimen Drying Instructions:
- Allow filter spots to air-dry completely (4 hrs.) on a horizontally level, nonabsorbent, open surface at ambient temperature. Keep the specimen away from heat and direct sunlight.

Shipping Requirements: U.S. Postal regulations require: ***Double*** containment of dried blood filter paper specimens. Ensure specimens are thoroughly dried prior to placing in envelope.

1st containment: Use the attached wrap-around cover with printed universal biohazard symbol. ***Do not put biohazard labels on outside of envelope!***

2nd containment: Use Special Envelope designed for shipping of Newborn Screening specimens. ***Do not put specimens in plastic bags!***

- Notes: If placing more that one specimen in an envelope, rotate each specimen 180° such that the blood specimens do not touch. Ship specimens at room temperature within 24 hours of specimen collection. Avoid temperatures greater than 100°F.

Billing

CPT Code: 83789	**Fees:** $24.00

Environmental Tests

Air- Organic

Formaldehyde

Formaldehyde	Matrix	Air sample/ Sodium bisulfite
	Method	NIOSH 3500 Formaldehyde in air
	Sample Size Container	25 mL polyethylene bottles
	Preservation	25° C
	Holding Time	30 days
	Fee	118.00

Insecticides in Air

Diazinon Heptachlor Dursban Chlordane	Matrix	Air sample/ Chromosorb tube
	Method	NIOSH 5510 Pesticides in air
	Sample Size Container	Chromosorb 102 (100/50 mg)
	Preservation	25° C
	Holding Time	7 days
	Fee	145.00

Volatile Organics in Air

1,1,1-Trichloroethane, 1,2,4-Trimethylbenzene, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene, 2-Ethoxy ethyl acetate, 2-Heptanone, 2-Propanol, Acetone, Benzene, Butoxy ethanol, Butyl acetate, Cumene (isopropyl benzene), Cyclohexane, Cyclohexanone, Ethanol, Ethyl acetate, Ethyl methacrylate, Ethylbenzene, Heptane, Chloroform, Hexachloroethane, iso-Butanol, Isoamyl acetate, Limonene, m/p-Xylene, Methyl ethyl ketone (MEK), Methyl isobutyl ketone, Methyl methacrylate, n-Propyl acetate, Naththalene, o-Xylene, Phenol, alpha-Pinene, sec-Butanol, Styrene, Tetrachloroethylene, Tetrahydrofuran, Toluene, Trichloroethylene	Matrix	Air sample/ Charcoal tube
	Method	NIOSH 1500 Volatiles in air
	Sample Size Container	Charcoal tube
	Preservation	25° C
	Holding Time	14 days
	Fee	135.00

Air - Radiation

Gross Alpha or Gross Beta

Gross Alpha or Gross Beta	Matrix	Air
	Method	EPA 900.0
	Sample Size Container	Filter
	Preservation	None
	Holding Time	180 days
	Fee	40.00

Gross Alpha and Gross Beta

Gross Alpha and Gross Beta	Matrix	Air
	Method	EPA 900.0
	Sample Size Container	Filter
	Preservation	None
	Holding Time	180 days
	Fee	52.00

Gamma Emitting Isotopes

Gamma Emitting Isotopes Be-7, Na-22, Na-24, Cl-38, K-40, Ar-41, K-42, Sc-44, Ti-44, Sc-46, V-48, Cr-51, Mn-54, Co-56, Mn-56, Co-57, Co-58, Fe-59, Co-60, Cu-64, Ni-65, Zn-65, Cu-67, Zn-69m, Se-75, As-76, Br-82, Rb-83, Br-84, Kr-85, Kr-85m, Sr-85, Kr-87, Kr-88, Rb-88, Y-88, Kr-89, Rb-89, Zr-89, Mo-90, Sr-91, Y-91m, Sr-92, Y-92, Sr-93, Y-93, Nb-94, Y-94, Nb-95, Nb-95m, Tc-95, Zr-95, Nb-96, Tc-96, Nb-97, Zr-97, Mo-99, Tc-99m, Ru-103, Rh-105, Ru-106, Ag-108m, Cd-109, Ag-110m, Sn-113, Sb-122, I-124, Sb-124, I-125, Sb-125, Xe-125, I-126, Sb-126, I-129, I-130, I-131, Xe-131m, I-132, Te-132, Ba-133, I-133, Xe-133, Xe-133m, Cs-134, I-134, I-135, Xe-135, Xe-135m, Cs-136, Cs-137, Cs-138, Xe-138, Ba-139, Ce-139, Ba-140,	Matrix	Air
	Method	EPA 901.1
	Sample Size Container	Filter or Cartridge
	Preservation	None
	Holding Time	180 days
	Fee	64.00
	La-140, Ce-141, Ce-143, Ce-144, Nd-147, Eu-152, Gd-153, Eu-154, Eu-155, Eu-156, Yb-169, Ta-178, Hf-181, Ta-182, W-187, Ir-192, Au-198, Hg-203, Tl-208, Pb-210, Bi-211, Pb-211, Bi-212, Pb-212, Bi-214, Pb-214, Rn-219, Ra-226, Th-227, Ac-228, Pa-231, Th-231, Th-232, Pa-234, Pa-234m, Th-234, U-235, U-238, Am-241, Cm-243		

Radium 226

Radium 226 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Air
	Method	EPA 903.1
	Sample Size Container	Filter or Cartridge
	Preservation	None
	Holding Time	180 days
	Fee	109.00

Radium 228

Radium 228 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Air
	Method	EPA 904.0
	Sample Size Container	Filter or Cartridge
	Preservation	None
	Holding Time	180 days
	Fee	78.00

Uranium Isotopes by Alpha Spectroscopy

Uranium Isotopes by Alpha Spectroscopy Includes Uranium 234, Uranium 235, and Uranium 238 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Air
	Method	DOE-RESL A-20 Alpha Spectroscopy
	Sample Size Container	Filter or Cartridge
	Preservation	None
	Holding Time	180 days
	Fee	68.00

Plutonium Isotopes

Plutonium Isotopes Includes Plutonium 238 and Plutonium 239 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Air
	Method	DOE-RESL A-20 Alpha Spectroscopy
	Sample Size Container	Filter or Cartridge
	Preservation	None
	Holding Time	180 days
	Fee	72.00

Thorium Isotopes

Thorium Isotopes Includes Thorium 228, Thorium 230, and Thorium 232 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Air
	Method	DOE-RESL A-20 Alpha Spectroscopy
	Sample Size Container	Filter or Cartridge
	Preservation	None
	Holding Time	180 days
	Fee	70.00

Strontium 89 or Strontium 90

Strontium 89 or Strontium 90	Matrix	Air
	Method	EPA 905.1
	Sample Size Container	Filter or Cartridge
	Preservation	None
	Holding Time	180 days
	Fee	118.00

Tritium

Tritium	Matrix	Air
	Method	EPA Azeotropic Distill
	Sample Size Container	Filter or Cartridge
	Preservation	None
	Holding Time	180 days
	Fee	71.00

Alpha spectroscopy Preparation Procedure

Alpha Spectroscopy Preparation Procedure	Matrix	Air
	Method	DOE-RESL A-20 Pyrosulfate Fusion
	Sample Size Container	Filter or Cartridge
	Preservation	None
	Holding Time	180 days
	Fee	123.00

Carbon 14

Carbon 14	Matrix	Air
	Method	Liquid Scintillation
	Sample Size Container	Filter or Cartridge
	Preservation	None
	Holding Time	180 days
	Fee	116.00

Drinking Water - Inorganic

Alkalinity, Total and Phenolphthalein

Alkalinity Total and Phenolphthalein	Matrix	Water
	Method	Standard Methods 2320B
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	14 Days
	Fee	23.00

Bicarbonate-Carbonate, with Alkalinity

Bicarbonate-carbonate, with alkalinity	Matrix	Water
	Method	Standard Methods 2320B
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	14 Days
	Fee	15.00

Bicarbonate-Carbonate, without Alkalinity

Bicarbonate-carbonate, without alkalinity	Matrix	Water
	Method	Standard Methods 2320B
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	14 Days
	Fee	23.00

Bromate

Bromate	Matrix	Water
	Method	EPA 300.1
	Sample Size Container	1 Quart Plastic Container
	Preservation	50 mg/L LEDA
	Holding Time	28 Days
	Fee	110.00

Bromide

Bromide	Matrix	Water
	Method	EPA 300.0
	Sample Size Container	1 Quart Plastic Container
	Preservation	None
	Holding Time	28 Days
	Fee	25.00

Carbon, Total Organic

Carbon, Total Organic	Matrix	Water
	Method	Standard Methods 5310C
	Sample Size Container	1 Quart Glass Container
	Preservation	pH <2 with sulfuric acid
	Holding Time	28 Days
	Fee	43.00

Chloride

Chloride	Matrix	Water
	Method	EPA 300.0
	Sample Size Container	1 Quart Plastic Container
	Preservation	None
	Holding Time	28 Days
	Fee	21.00

Chlorite

Chlorite	Matrix	Water
	Method	EPA 300.1
	Sample Size Container	1 Quart Plastic Container
	Preservation	50 mg/L LEDA
	Holding Time	14 Days
	Fee	55.00

Chlorate

Chlorate	Matrix	Water
	Method	EPA 300.0
	Sample Size Container	1 Quart Plastic Container
	Preservation	None
	Holding Time	28 Days
	Fee	55.00

Color

Color	Matrix	Water
	Method	Standard Methods 2120B
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	48 hours
	Fee	24.00

Conductance

Conductance	Matrix	Water
	Method	Standard Methods 2510B
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	28 Days
	Fee	19.00

Cyanide, Total

Cyanide, Total	Matrix	Water
	Method	EPA 9010A
	Sample Size Container	1 Quart Plastic Container
	Preservation	pH >12 with sodium hydroxide 4° C
	Holding Time	14 Days

	Fee	55.00

Fluoride

Fluoride	Matrix	Water
	Method	EPA 300.0
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	28 Days
	Fee	21.00

Hardness

Hardness	Matrix	Water
	Method	EPA 130.1
	Sample Size Container	1 Quart Plastic Container
	Preservation	pH < 2 with sulfuric acid
	Holding Time	180 Days
	Fee	43.00

Nitrate + Nitrite

Nitrate + Nitrite as Nitrogen	Matrix	Water
	Method	EPA 353.2
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C, Chlorinated
	Holding Time	14 Days
	Fee	25.00

Nitrate

Nitrate as Nitrogen	Matrix	Water
	Method	EPA 353.2
	Sample Size Container	100 mL Plastic Container
	Preservation	4° C
	Holding Time	48 Hours

	Fee	25.00

Nitrite

Nitrite as Nitrogen	Matrix	Water
	Method	EPA 353.2
	Sample Size Container	100 mL Plastic Container
	Preservation	4° C
	Holding Time	48 Hours
	Fee	25.00

Perchlorate

Perchlorate	Matrix	Water
	Method	EPA 314.0
	Sample Size Container	1 Quart Plastic Container
	Preservation	None
	Holding Time	28 Days
	Fee	55.00

pH

pH	Matrix	Water
	Method	EPA 150.1
	Sample Size Container	1 Quart Plastic Container
	Preservation	none
	Holding Time	Immediate analysis required
	Fee	17.00

Residue, Total

Residue, Total	Matrix	Water
	Method	Standard Methods 2540B
	Sample Size Container	1 Quart Plastic Container
	Preservation	none
	Holding Time	Immediate analysis required

	Fee	22.00

Routine Water Group

Routine Water Group pH, Conductance, Alkalinity, Chloride, Sulfate, Fluoride, Nitrate, Total Dissolved Solids	Matrix	Water
	Method	EPA 150.1, 300.0,353.2, Standard Methods 2320B, 2510B, 1030F
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	14 Days
	Fee	155.00

Silica, Dissolved

Silica, Dissolved	Matrix	Water
	Method	Standard Methods 4500Si-F
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	28 Days
	Fee	24.00

Solids, Total Dissolved

Solids, Total Dissolved, Calculated	Matrix	Water
	Method	Standard Methods 1030F
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	14 Days
	Fee	14.00

Solids, Total Dissolved

Solids, Total Dissolved, Determined	Matrix	Water
	Method	Standard Methods 2540C
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	14 Days
	Fee	31.00

Sulfate

Sulfate	Matrix	Water
	Method	EPA 300.0
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	28 Days
	Fee	21.00

Turbidity

Turbidity	Matrix	Water
	Method	EPA 180.1
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	48 Hours
	Fee	20.00

Drinking Water- SVOC

Trihalomethanes in Drinking Water

Chloroform Dichlorobromomethane Dibromochloromethane Bromoform	Matrix	Drinking Water
	Method	EPA 502.2 Trihalomethanes
	Sample Size Container	2-40 mL glass vials
	Preservation	Sodium thiosulfate 4° C
	Holding Time	14 days
	Fee	84.00

Ethylene Dibromide and Dibromochloropropane in Drinking Water

1,2-Dibromoethane (EDB) 1,2-Dibromo-3-chloropropane (DBCP)	Matrix	Drinking Water
	Method	EPA 504.1 EDB-DBCP
	Sample Size Container	2-40 mL glass vials Field blank required 2-40 mL vials
	Preservation	Sodium thiosulfate 4° C
	Holding Time	14 days
	Fee	156.00

Chlorinated Pesticides in Drinking Water

Alachlor Aroclor Atrazine Chlordane Endrin Heptachlor Heptachlor epoxide Hexachlorobenzene Lindane Methoxychlor Simazine	Toxaphene Aldrin Dieldrin Butachlor Ethyl parathion Methyl parathion Metolachlor Metribuzin Propachlor Trifluralin	Matrix	Drinking Water
		Method	EPA 505 Pesticides
		Sample Size Container	2-40 mL glass vials
		Preservation	Sodium thiosulfate 4° C
		Holding Time	7 days
		Fee	184.00

Chlorinated Pesticides and PCBs in Drinking Water

Alachlor Aroclor Atrazine Chlordane Endrin Heptachlor Heptachlor epoxide Hexachlorobenzene Lindane Methoxychlor Simazine	Toxaphene Aldrin Dieldrin Butachlor Ethyl parathion Methyl parathion Metolachlor Metribuzin Propachlor Trifluralin	Matrix	Drinking Water
		Method	EPA 508 Pesticides
		Sample Size Container	1 Liter glass
		Preservation	Sodium thiosulfate 4° C
		Holding Time	7 days
		Fee	184.00

Decachlorobiphenyl in Drinking Water

Decachlorobiphenyl (total PCB)	Matrix	Drinking Water
	Method	EPA 508A PCB
	Sample Size Container	1 Liter glass
	Preservation	4° C
	Holding Time	14 days
	Fee	293.00

Chlorophenoxy Herbicides in Drinking Water

2,4-D 2,4,5-TP(Silvex) Pentachlorophenol Dalapon Dinoseb Picloram 2,4,5-T Bentazon Dicamba	Matrix	Drinking Water
	Method	EPA 515.1 Herbicides
	Sample Size Container	500 mL amber glass
	Preservation	Sodium thiosulfate 4° C
	Holding Time	14 days
	Fee	220.00

Carbamates in Drinking Water

Regulated compounds: Aldicarb sulfoxide Aldicarb sulfone Oxamyl Aldicarb Carbofuran	**Other compounds:** Methomyl 3-Hydroxycarbofuran Baygon Carbaryl Methiocarb	Matrix	Drinking Water
		Method	EPA 531.1 Carbamates
		Sample Size Container	2-40 mL glass vials
		Preservation	Sodium thiosulfate pH 3 with monochloroacetic acid 4° C
		Holding Time	28 days
		Fee	200.00

Glyphosate

Glyphosate	Matrix	Drinking water
	Method	EPA 547 Herbicide
	Sample Size Container	2-40 mL glass vials
	Preservation	Sodium thiosulfate 4° C
	Holding Time	14 days
	Fee	169.00

Endothall

Endothall	Matrix	Drinking water
	Method	EPA 548.1 Herbicide
	Sample Size Container	250 mL amber glass
	Preservation	Sodium thiosulfate 4° C
	Holding Time	7 days
	Fee	357.00

Diaquat and Paraquat

Diquat Paraquat	Matrix	Drinking water
	Method	EPA 549.2 Herbicide
	Sample Size Container	250 mL amber plastic or amber silanized glass
	Preservation	Sodium thiosulfate 4° C
	Holding Time	7 days
	Fee	242.00

Chlorinated Disinfection Byproducts (Haloacetonitriles)

Trichloroacetonitrile Dichloroacetonitrile Bromochloroacetonitrile Dibromoacetonitrile 1,1-Dichloro-2-propanone 1,1,1-Trichloro-2-propanone Chloropicrin	Matrix	Drinking water
	Method	EPA 551.1 Disinfection by products
	Sample Size Container	2-60 mL glass vials
	Preservation	Ammonium chloride 4° C
	Holding Time	14 days
	Fee	188.00

Chloral Hydrate

Chloral hydrate	Matrix	Drinking water
	Method	EPA 551.1 Disinfection by products
	Sample Size Container	2-60 mL glass vials
	Preservation	Sodium sulfite 4° C
	Holding Time	14 days
	Fee	188.00

Haloacetic Acids and Dalapon in Drinking Water

Regulated compounds: Monochloroacetic acid Dichloroacetic acid Trichloroacetic acid Monobromoacetic acid Dibromoacetic acid **Monitor compounds:** Bromochloroacetic acid Dalapon	Matrix	Drinking water
	Method	EPA 552.2 Disinfection byproducts
	Sample Size Container	2-60 mL amber glass
	Preservation	Ammonium chloride 4° C
	Holding Time	14 days
	Fee	230.00

Semi-Volatile Organic Compounds in Drinking Water

See Table 1 for list of semi-volatile organic compounds	Matrix	Drinking Water
	Method	EPA 525.2 Semivolatile
	Sample Size Container	1 Liter amber glass
	Preservation	Sodium sulfite pH <2 with 6 N HCl 4° C
	Holding Time	14 days
	Fee	300.00

Table 1. Semi-Volatile Organic Compounds in Drinking Water

Pesticides	**PCBs**
Alachlor (1)	2-Chlorobiphenyl
Aldrin	2,3-Dichlorobiphenyl
Atrazine (1)	2,4,5-Trichlorobiphenyl
Bromacil	2,2’,4,4’-Tetrachlorobiphenyl
Chlordane (alpha-chlordane) (1)	2,2’,3’,4,6-Pentachlorobiphenyl
Chlordane (gamma-chlordane) (1)	2,2’,4,4’,5,6’-Hexachlorobiphenyl
Chlordane (trans-nonachlor) (1)	2,2’,3,3’,4,4’,6-Heptachlorobiphenyl
Dieldrin	2,2’,3,3’,4,5’,6,6’-Octachlorobiphenyl
Endrin (1)	
Heptachlor (1)	**Phthalates**
Heptachlor epoxide (1)	
Hexachlorobenzene (1)	Di-(2-ethylhexyl)adipate (1)
Hexachlorocyclopentadiene (1)	Di-(2-ethylhexyl)phthalate (1)
Lindane (1)	Butylbenzylphthalate
Methoxychlor (1)	Di-n-butylphthalate
Metolachlor	Diethylphthalate
Metribuzin	Dimethylphthalate
Pentachlorophenol (1)	
Prometon	
Propachlor	
Simzaine (1)	(1) – Regulated Compound
Trifluralin	
PAHs	
Acenaphthene	
Acenaphthylene	
Anthracene	
Benzo[a]anthracene	
Benzo[a]pyrene (1)	
Benzo[b]fluoranthene	
Benzo[g,h,i]perylene	
Benzo[k]fluoranthene	
Chrysene	
Dibenz[a,h]anthracene	
Fluorene	
Indeno[1,2,3,c,d]pyrene	
Naphthalene	
Phenanthrene	
Pyrene	

Drinking Water - Volatile Organic Compounds

Volatile Organic Compounds in Drinking Water

Regulated Compounds
Benzene, Carbon tetrachloride, Chlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichloroethane, 1,1-Dichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene,

1,2-Dichloropropane, Methylene chloride, Ethylbenzene, Styrene, Tetrachloroethene, Toluene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethene, Vinyl chloride, m & p-Xylene, o-Xylene,

Monitor Compounds
Chloroform, Bromodichloromethane, Dibromochloromethane, Bromoform, Dibromomethane, 1,3-Dichlorobenzene, 1,1-Dichloropropene, 1,1-Dichloroethane, 1,1,2,2-Tetrachloroethane, 1,3-Dichloropropane, Chloromethane, Bromomethane, 1,2,3-Trichloropropane, 1,1,1,2-Tetrachloroethane, Chloroethane, 2,2-Dichloropropane, 2-Chlorotoluene, 4-Chlorotoluene, Bromobenzene, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, 1,2,4-Trimethylbenzene, 1,2,3-Trichlorobenzene, n-Propylbenzene, n-Butylbenzene, Naphthalene, Hexachlorobutadiene, 1,3,5-Trimethylbenzene, 4-Isopropyltoluene,

Isopropylbenzene, t-Butylbenzene, s-Butylbenzene, Trichlorofluoromethane, Dichlorodifluoromethane, Bromochloromethane

Other compounds
Acetone, Acrylonitrile, 2-Butanone (MEK), Carbon disulfide, Ethyl methacrylate, 2-Hexanone, Iodomethane, Methyl methacrylate,

4-Methyl-2-pentanone (MIBK), Methyl-t-butyl ether (MTBE),

Tetrahydrofuran, Vinyl acetate

Matrix	Drinking water
Method	EPA 524.2 Volatiles
Sample Size Container	2-40 mL glass vials
Preservation	Ascorbic acid pH <2 with HCl 4° C
Holding Time	14 days
Fee	183.00

Food and Food Products

Added Substances

Added Substances	Matrix	Food Products
	Method	USDA Calculation
	Sample Size Container	¾ Pound plastic bag
	Preservation	4° C
	Holding Time	N/A
	Fee	13.00

Added Water

Added Water	Matrix	Food Products
	Method	USDA Calculation
	Sample Size Container	¾ Pound plastic bag
	Preservation	4° C
	Holding Time	N/A
	Fee	13.00

Deterioration, Canned Products

Deterioration, Canned Products	Matrix	Food Products
	Method	AOAC Chart
	Sample Size Container	N/A
	Preservation	None
	Holding Time	N/A
	Fee	24.00

Fat, Paly Screen

Fat, Paly Screen	Matrix	Food Products
	Method	AOAC 46.616
	Sample Size Container	100 gram plastic bag
	Preservation	4° C
	Holding Time	N/A
	Fee	35.00

Fat, Soxhlet Extraction

Fat, Soxhlet Extraction	Matrix	Food Products
	Method	USDA FAT1
	Sample Size Container	100 gram plastic bag
	Preservation	4° C
	Holding Time	1 week
	Fee	81.00

Filth

Filth	Matrix	Food Products
	Method	AOAC Methods
	Sample Size Container	100 g
	Preservation	None
	Holding Time	N/A
	Fee	35.00

Insect Identification

Insect Identification	Matrix	Food Products
	Method	FDA Technical Bulletin #2
	Sample Size Container	N/A
	Preservation	None
	Holding Time	N/A
	Fee	35.00

Meat Protein

Meat Protein	Matrix	Food Products
	Method	USDA Calculation
	Sample Size Container	¾ Pound plastic bag
	Preservation	4° C
	Holding Time	N/A
	Fee	15.00

Moisture (Total Water)

Moisture	Matrix	Food Products
	Method	USDA MO1
	Sample Size Container	¾ Pound plastic bag
	Preservation	4° C
	Holding Time	7 Days
	Fee	17.00

pH of Food Products

pH of Food Products	Matrix	Food Products
	Method	AOAC 981.12
	Sample Size Container	N/A
	Preservation	None
	Holding Time	N/A
	Fee	20.00

Protein

Protein	Matrix	Food Products
	Method	USDA Protein-Block Digestion
	Sample Size Container	¾ Pound plastic bag
	Preservation	4° C
	Holding Time	14 Days
	Fee	58.00

Salt

Salt	Matrix	Food Products
	Method	USDA SLT
	Sample Size Container	¾ Pound plastic bag
	Preservation	4° C
	Holding Time	7 Days
	Fee	105.00

Water Activity

Water Activity	Matrix	Food Products
	Method	Rotrunic Hygroskop Operations Manual
	Sample Size Container	N/A
	Preservation	None
	Holding Time	14 Days
	Fee	35.00

Metals

Metals in Drinking Water by ICP

Calcium Iron Magnesium Sodium	Matrix	Water
	Method	EPA 200.7
	Sample Size Container	1 liter polyethylene
	Preservation	Adjust pH <2 with nitric acid (Acidified at TDSHS if received within 14 days of collection)
	Holding Time	6 months
	Fee	19.00 per metal

Metals in Drinking Water by ICP-MS

Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Copper	Lead Manganese Nickel Selenium Silver Thallium Zinc	Matrix	Water
		Method	EPA 200.8
		Sample Size Container	1 liter polyethylene
		Preservation	Adjust pH <2 with nitric acid (Acidified at TDSHS if received within 14 days of collection)
		Holding Time	6 months
		Fee	25.00 per metal

Mercury in Drinking Water

Mercury	Matrix	Water
	Method	EPA 245.1
	Sample Size Container	1 liter polyethylene
	Preservation	Adjust pH <2 with nitric acid (Acidified at TDH if received within 14 days of collection)
	Holding Time	28 days
	Fee	25.00

Metals by ICP

Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Copper Iron Lead Lithium	Magnesium Manganese Molybdenum Nickel Potassium Silver Sodium Strontium Vanadium Zinc	Matrix	Water, soil, tissue
		Method	EPA 200.7, SW-846 6010B
		Sample Size Container	1 liter polyethylene (water) 200 grams (soil, tissue)
		Preservation	Water: adjust pH <2 with nitric acid Soil: Store at 4˚ C Tissue: Store at 4˚ C or less
		Holding Time	6 months
		Fee	Water: 19.00 per metal Soil: 21.00 per metal Tissue: 19.00 per metal

Metals by ICP-MS

Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Copper Lead	Manganese Molybdenum Nickel Selenium Silver Thallium Vanadium Zinc	Matrix	Water
		Method	EPA 200.8, SW-846 6020
		Sample Size Container	1 liter polyethylene
		Preservation	Adjust pH <2 with nitric acid
		Holding Time	6 months
		Fee	Water, Soil, Tissue: 25.00 per metal

Mercury by Cold Vapor Atomic Absorption (CVAAS)

Mercury	Matrix	Water, soil, tissue
	Method	EPA 245.1, SW-846 7470A, 7471A, EPA 245.6
	Sample Size Container	1 liter polyethylene (water) 200 grams (soil, tissue)
	Preservation	Water: adjust pH <2 with nitric acid Soil: Store at 4˚ C Tissue: Store at 4˚ C or less
	Holding Time	28 days
	Fee	Water, Soil, Tissue: 32.00

Metals by Gaseous Hydride Atomic Absorption (GHAAS)

Arsenic Selenium	Matrix	Water, soil, tissue
	Method	SM 3114C
	Sample Size Container	1 liter polyethylene (water) 200 grams (soil, tissue)
	Preservation	Water: adjust pH <2 with nitric acid Soil: Store at 4˚ C Tissue: Store at 4˚ C or less
	Holding Time	6 months
	Fee	Water, Soil, Tissue: 30.00

Metals by Graphite Furnace Atomic Absorption (GFAAS)

Cadmium Lead	Matrix	Soil, tissue
	Method	SW-846 7131A, 7421
	Sample Size Container	200 grams
	Preservation	Soil: Store at 4˚ C Tissue: Store at 4˚ C or less
	Holding Time	6 months
	Fee	Water, Soil, Tissue: 30.00

Metals by Flame Atomic Absorption (FLAAS)

Lead	Matrix	Paint, Soil, Wipes, Consumer Products
	Method	SW-846 7420
	Sample Size Container	Variable
	Preservation	None
	Holding Time	6 months
	Fee	Paint, Soil: 35.00 Wipe: 32.00 Food: 36.00

Metals in Pottery

Cadmium Lead	Matrix	Pottery Leachate
	Method	AOAC 973.32
	Sample Size Container	Variable
	Preservation	None
	Holding Time	6 months
	Fee	47.00

Soil - Radiation

Gross Alpha or Gross Beta

Gross Alpha or Gross Beta	Matrix	Soil
	Method	EPA 900.0
	Sample Size Container	400 gram Plastic Tub
	Preservation	None
	Holding Time	180 days
	Fee	65.00

Gross Alpha and Gross Beta

Gross Alpha and Gross Beta	Matrix	Soil
	Method	EPA 900.0
	Sample Size Container	400 gram Plastic Tub
	Preservation	None
	Holding Time	180 days
	Fee	81.00

Gamma Emitting Isotopes

Gamma Emitting Isotopes Be-7, Na-22, Na-24, Cl-38, K-40, Ar-41, K-42, Sc-44, Ti-44, Sc-46, V-48, Cr-51, Mn-54, Co-56, Mn-56, Co-57, Co-58, Fe-59, Co-60, Cu-64, Ni-65, Zn-65, Cu-67, Zn-69m, Se-75, As-76, Br-82, Rb-83, Br-84, Kr-85, Kr-85m, Sr-85, Kr-87, Kr-88, Rb-88, Y-88, Kr-89, Rb-89, Zr-89, Mo-90, Sr-91, Y-91m, Sr-92, Y-92, Sr-93, Y-93, Nb-94, Y-94, Nb-95, Nb-95m, Tc-95, Zr-95, Nb-96, Tc-96, Nb-97, Zr-97, Mo-99, Tc-99m, Ru-103, Rh-105, Ru-106, Ag-108m, Cd-109, Ag-110m, Sn-113, Sb-122, I-124, Sb-124, I-125, Sb-125, Xe-125, I-126, Sb-126, I-129, I-130, I-131, Xe-131m, I-132, Te-132, Ba-133, I-133, Xe-133, Xe-133m, Cs-134, I-134, I-135, Xe-135, Xe-135m, Cs-136, Cs-137, Cs-138, Xe-138, Ba-139, Ce-139, Ba-140,	Matrix	Soil
	Method	EPA 901.1
	Sample Size Container	400 gram Plastic Tub
	Preservation	None
	Holding Time	180 days
	Fee	112.00
	La-140, Ce-141, Ce-143, Ce-144, Nd-147, Eu-152, Gd-153, Eu-154, Eu-155, Eu-156, Yb-169, Ta-178, Hf-181, Ta-182, W-187, Ir-192, Au-198, Hg-203, Tl-208, Pb-210, Bi-211, Pb-211, Bi-212, Pb-212, Bi-214, Pb-214, Rn-219, Ra-226, Th-227, Ac-228, Pa-231, Th-231, Th-232, Pa-234, Pa-234m, Th-234, U-235, U-238, Am-241, Cm-243	

Radium 226

Radium 226 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Soil
	Method	EPA 903.1
	Sample Size Container	400 gram Plastic Tub
	Preservation	None
	Holding Time	180 days
	Fee	109.00

Radium 228

Radium 228 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Soil
	Method	EPA 904.0
	Sample Size Container	400 gram Plastic Tub
	Preservation	None
	Holding Time	180 days
	Fee	88.00

Uranium Isotopes by Alpha Spectroscopy

Uranium Isotopes by Alpha Spectroscopy Includes Uranium 234, Uranium 235, and Uranium 238 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Soil
	Method	DOE-RESL A-20 Alpha Spectroscopy
	Sample Size Container	400 gram Plastic Tub
	Preservation	None
	Holding Time	180 days
	Fee	68.00

Plutonium Isotopes

Plutonium Isotopes Includes Plutonium 238 and Plutonium 239 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Soil
	Method	DOE-RESL A-20 Alpha Spectroscopy
	Sample Size Container	400 gram Plastic Tub
	Preservation	None
	Holding Time	180 days
	Fee	65.00

Thorium Isotopes

Thorium Isotopes Includes Thorium 228, Thorium 230, and Thorium 232 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Soil
	Method	DOE-RESL A-20 Alpha Spectroscopy
	Sample Size Container	400 gram Plastic Tub
	Preservation	None
	Holding Time	180 days
	Fee	70.00

Strontium 89 or Strontium 90

Strontium 89 or Strontium 90	Matrix	Soil
	Method	EPA 905.1
	Sample Size Container	400 gram Plastic Tub
	Preservation	None
	Holding Time	180 days
	Fee	118.00

Tritium

Tritium	Matrix	Soil
	Method	EPA Azeotropic Distillation
	Sample Size Container	400 gram Plastic Tub
	Preservation	None
	Holding Time	180 days
	Fee	79.00

Alpha Spectroscopy Preparation Procedure

Alpha Spectroscopy Preparation Procedure	Matrix	Soil
	Method	DOE-RESL A-20 Pyrosulfate Fusion
	Sample Size Container	400 gram Plastic Tub
	Preservation	None
	Holding Time	180 days
	Fee	123.00

Tissue

Volatile Organic Compounds in Tissue

See Table 2 for list of volatile organic compounds	Matrix	Tissue (Seafood (fish))
	Method	JAOAC 64:653:ff
	Sample Size/Container	250 gms/glass
	Preservation	-10° C
	Holding Time	1 Yr
	Fee	249.00

Table 2. Volatile Organic Compounds in Tissue

1,1,1,2-Tetrachloroethane	Acetone	Methyl tert-butyl ether
1,1,1-Trichloroethane	Acrylonitrile	Methylene chloride
1,1,2,2-Tetrachloroethane	Benzene	n-Butylbenzene
1,1,2-Trichloroethane	Bromobenzene	n-Propylbenzene
1,1-Dichloroethane	Bromochloromethane	Naphthalene
1,1-Dichloroethene	Bromodichloromethane	o-Xylene
1,1-Dichloropropene	Bromoform	sec-Butylbenzene
1,2,3-Trichloropropane	Bromomethane Carbon disulfide	Styrene
1,2,4-Trichlorobenzene	Carbon tetrachloride	tert-Butylbenzene
1,2,4-Trimethylbenzene	Chlorobenzene	Tetrachloroethene
1,2-Dibromo-3-chloropropane	Chloroethane	Tetrahydrofuran
1,2-Dibromoethane	Chloroform	Toluene
1,2-Dichlorobenzene	Chloromethane	trans-1,2-Dichloroethene
1,2-Dichloroethane	cis-1,2-Dichloroethene	trans-1,3-Dichloropropene
1,2-Dichloropropane	cis-1,3-Dichloropropene	Trichloroethene
1,3,5-Trimethylbezene	Dibromochloromethane	Trichlorofluoromethane
1,3-Dichlorobenzene	Dibromomethane	Vinyl chloride
1,3-Dichloropropane	Dichlorodifluoromethane	
1,4-Dichlorobenzene	Ethyl methacrylate	
2,2-Dichloropropane	Ethylbenzene	
2-Butanone	Hexachlorobutadiene	
2-Chlorotoluene	Iodomethane	
2-Hexanone	Isopropylbenzene	
4-Chlorotoluene	m&p-Xylene	
4-Isopropyl toluene	Methyl methacrylate	
4-Methyl-2-pentanone		

Organochlorine Pesticides and PCBs in Tissue

See Table 3 for list of Organochlorine pesticides and PCBs	Matrix	Seafood (fish)
	Method	PAM 304 E1/8081 Chlorinated Insecticides/PCB
	Sample Size Container	250 gm glass
	Preservation	-10° C
	Holding Time	1 Yr
	Fee	Fish Fillets: 812.00 Whole Fish: 965.00

Table 3. Organochlorine Pesticides and PCBs in Tissue

Aldrin	Heptachlor
Alachlor	Heptachlor Epoxide
alpha BHC	Hexachlorobenzene
beta BHC	Lindane
delta BHC	Malathion
Chlordane	Methoxychlor
Chlorpyrifos	Mirex
p,p'-DDD	Ethyl Parathion
p,p'-DDE	Methyl Parathion
p,p'-DDT	Toxaphene
Dacthal	Aroclor 1016
Diazinon	Aroclor 1221
Dieldrin	Aroclor 1232
Endosulfan I	Aroclor 1242
Endosulfan II	Aroclor 1248
Endosulfan Sulfate	Aroclor 1254
Endrin	Aroclor 1260

Semivolatile Organic Compounds in Tissue

See Table 4 for list of Semivolatile Organic Compounds	Matrix	Seafood (fish)
	Method	8270C Semivolatiles
	Sample Size Container	250 gm glass
	Preservation	-10° C
	Holding Time	1 Yr.
	Fee	518.00

Table 4. Semivolatile Organic Compounds

1,2,4,5-Tetrachlorobenzene	Acenaphthene	bis(2-Ethylhexyl)adipate
1,2,4-Trichlorobenzene	Acenaphthylene	bis(2-Ethylhexyl)phthalate
1,2-Dichlorobenzene	Aldrin	Fluoranthene
1,3-Dichlorobenzene	Anline	Fluorene
1,4-Dichlorobenzene	Anthracene	Heptachlor
2,4,5-Trichlorophenol	Benzidine	Heptachlor epoxide
2,4,6-Trichlorophenol	Benzo[a]anthracene	Hexachlorobenzene
2,4-Dichlorophenol	Benzo[a]pyrene	Hexachlorobutadiene
2,4-Dimethylphenol	Benzo[b]fluoranthene	Hexachlorocyclopentadiene
2,4-Dinitrophenol	Benzo[g,h,i]perylene	Hexachloroethane
2,4-Dinitrotoluene	Benzo[k]fluoranthene	Hexachlorophene
2,6-Dinitrotoluene	Benzoic Acid	Indeno[1,2,3-cd]pyrene
2-Chloronaphthalene	Benzyl alcohol	Isophorone
2-Chlorophenol	Dibenz[a,h]anthracene	Lindane
2-Methylnaphthalene	Dibenzofuran	Naphthalene
2-Methylphenol	Dieldrin	Nitrobenzene
2-Nitroaniline	Diethylphthalate	N-Nitrosodiethylamine
2-Nitrophenol	Dimethylphthalate	N-Nitrosodimethylamine
3,3’-Dichlorobenzidine	Di-n-butylphthalate	N-Nitroso-di-n-butylamine
3/4-Methylphenol (coelute)	Di-n-Octylphthalate	N-Nitroso-di-n-propylamine
3-Nitroaniline	Diphenylhydrazine	N-Nitrosodiphenylamine
4,6-Dinitro-2-methylphenol	Endosulfan sulfate	Pentachlorophenol
4_Chloro-3-methylphenol	Endrin	Phenanthrene
4-Bromophenyl-phenylether	Dibenzofuran	Phenol
4-Chloroaniline	Dieldrin	Pyrene
4-Chlorophenyl-phenylether	Diethylphthalate	Pyridine
4-Nitroaniline	Dimethylphthalate	
4-Nitrophenol	Di-n-butylphthalate	
alpha-BHC	Di-n-Octylphthalate	
beta-BHC	Diphenylhydrazine	
delta-BHC	Endosulfan sulfate	
Butylbenzylphthalate	Endrin	
bis(2-Chloroethoxy)methane	Endrin	
bis(2-Chloroethyl)ether	Endrin Aldehyde	
bis(2-Chloroisopropyl)ether	Endrin ketone	
Chrysene	alpha-Endosulfan	
p,p’-DDD	beta-Endosulfan	
p,p’-DDE	beta-Endosulfan	
p,p’-DDT		

Vegetation/Tissue - Radiation

Gross Alpha or Gross Beta

Gross Alpha or Gross Beta	Matrix	Vegetation/Tissue
	Method	EPA 900.0
	Sample Size Container	1 gallon plastic bag
	Preservation	None
	Holding Time	180 days
	Fee	65.00

Gross Alpha and Gross Beta

Gross Alpha and Gross Beta	Matrix	Vegetation/Tissue
	Method	EPA 900.0
	Sample Size Container	1 gallon plastic bag
	Preservation	None
	Holding Time	180 days
	Fee	89.00

Gamma Emitting Isotopes

Gamma Emitting Isotopes Be-7, Na-22, Na-24, Cl-38, K-40, Ar-41, K-42, Sc-44, Ti-44, Sc-46, V-48, Cr-51, Mn-54, Co-56, Mn-56, Co-57, Co-58, Fe-59, Co-60, Cu-64, Ni-65, Zn-65, Cu-67, Zn-69m, Se-75, As-76, Br-82, Rb-83, Br-84, Kr-85, Kr-85m, Sr-85, Kr-87, Kr-88, Rb-88, Y-88, Kr-89, Rb-89, Zr-89, Mo-90, Sr-91, Y-91m, Sr-92, Y-92, Sr-93, Y-93, Nb-94, Y-94, Nb-95, Nb-95m, Tc-95, Zr-95, Nb-96, Tc-96, Nb-97, Zr-97, Mo-99, Tc-99m, Ru-103, Rh-105, Ru-106, Ag-108m, Cd-109, Ag-110m, Sn-113, Sb-122, I-124, Sb-124, I-125, Sb-125, Xe-125, I-126, Sb-126, I-129, I-130, I-131, Xe-131m, I-132, Te-132, Ba-133, I-133, Xe-133, Xe-133m, Cs-134, I-134, I-135, Xe-135,	Matrix	Vegetation/Tissue
	Method	EPA 901.1
	Sample Size Container	1 gallon plastic bag
	Preservation	None
	Holding Time	180 days
	Fee	110.00
	Xe-135m, Cs-136, Cs-137, Cs-138, Xe-138, Ba-139, Ce-139, Ba-140, La-140, Ce-141, Ce-143, Ce-144, Nd-147, Eu-152, Gd-153, Eu-154, Eu-155, Eu-156, Yb-169, Ta-178, Hf-181, Ta-182, W-187, Ir-192, Au-198, Hg-203, Tl-208, Pb-210, Bi-211, Pb-211, Bi-212, Pb-212, Bi-214, Pb-214, Rn-219, Ra-226, Th-227, Ac-228, Pa-231, Th-231, Th-232, Pa-234, Pa-234m, Th-234, U-235, U-238, Am-241, Cm-243	

Radium 226

Radium 226 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Vegetation/Tissue
	Method	EPA 903.1
	Sample Size Container	1 gallon plastic bag
	Preservation	None
	Holding Time	180 days
	Fee	109.00

Radium 228

Radium 228 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Vegetation/Tissue
	Method	EPA 904.0
	Sample Size Container	1 gallon plastic bag
	Preservation	None
	Holding Time	180 days
	Fee	78.00

Uranium Isotopes by Alpha Spectroscopy

Uranium Isotopes by Alpha Spectroscopy Includes Uranium 234, Uranium 235, and Uranium 238 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Vegetation/Tissue
	Method	DOE-RESL A-20 Alpha Spectroscopy
	Sample Size Container	1 gallon plastic bag
	Preservation	None
	Holding Time	180 days
	Fee	68.00

Plutonium Isotopes

Plutonium Isotopes Includes Plutonium 238 and Plutonium 239 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Vegetation/Tissue
	Method	DOE-RESL A-20 Alpha Spectroscopy
	Sample Size Container	1 gallon plastic bag
	Preservation	None
	Holding Time	180 days
	Fee	65.00

Thorium Isotopes

Thorium Isotopes Includes Thorium 228, Thorium 230, and Thorium 232 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Vegetation/Tissue
	Method	DOE-RESL A-20 Alpha Spectroscopy
	Sample Size Container	1 gallon plastic bag
	Preservation	None
	Holding Time	180 days
	Fee	119.00

Strontium 89 or Strontium 90

Strontium 89 or Strontium 90	Matrix	Vegetation/Tissue
	Method	EPA 905.1
	Sample Size Container	1 gallon plastic bag
	Preservation	None
	Holding Time	180 days
	Fee	119.00

Tritium

Tritium	Matrix	Vegetation/Tissue
	Method	EPA Azeotropic Distillation
	Sample Size Container	1 gallon plastic bag
	Preservation	None
	Holding Time	180 days
	Fee	79.00

Alpha spectroscopy Preparation Procedure

Alpha Spectroscopy Preparation Procedure	Matrix	Vegetation/Tissue
	Method	DOE-RESL A-20 Pyrosulfate Fusion
	Sample Size Container	1 gallon plastic bag
	Preservation	None
	Holding Time	180 days
	Fee	123.00

Water - Radiation

Gross Alpha or Gross Beta

Gross Alpha or Gross Beta	Matrix	Water
	Method	EPA 900.0
	Sample Size Container	1 Gallon Plastic
	Preservation	None - Sample must be submitted to the lab within 5 days of collection.
	Holding Time	180 days after preservation in the lab.
	Fee	90.00

Gross Alpha and Gross Beta

Gross Alpha and Gross Beta	Matrix	Water
	Method	EPA 900.0
	Sample Size Container	1 Gallon Plastic
	Preservation	None - Sample must be submitted to the lab within 5 days of collection.
	Holding Time	180 days after preservation in the lab.
	Fee	100.00

Gamma Emitting Isotopes

Be-7, Na-22, Na-24, Cl-38, K-40, Ar-41, K-42, Sc-44, Ti-44, Sc-46, V-48,	Matrix	Water
	Method	EPA 901.1
	Sample Size Container	1 Gallon Plastic
Cr-51, Mn-54, Co-56, Mn-56, Co-57, Co-58, Fe-59, Co-60, Cu-64, Ni-65,	Preservation	None - Sample must be submitted to the lab within 5 days of collection.
	Holding Time	180 days after preservation in the lab.
Zn-65, Cu-67, Zn-69m, Se-75, As-76, Br-82, Rb-83, Br-84, Kr-85, Kr-85m, Sr-85, Kr-87, Kr-88, Rb-88, Y-88, Kr-89, Rb-89, Zr-89, Mo-90, Sr-91,	Fee	75.00
Y-91m, Sr-92, Y-92, Sr-93, Y-93, Nb-94, Y-94, Nb-95, Nb-95m, Tc-95, Zr-95, Nb-96, Tc-96, Nb-97, Zr-97, Mo-99, Tc-99m, Ru-103, Rh-105,	I-125, Sb-125, Xe-125, I-126, Sb-126, I-129, I-130, I-131, Xe-131m, I-132, Te-132, Ba-133, I-133, Xe-133, Xe-133m, Cs-134, I-134, I-135, Xe-135,Xe-135m, Cs-136, Cs-137, Cs-138, Xe-138, Ba-139, Ce-139, Ba-140,	
Ru-106, Ag-108m, Cd-109, Ag-110m, Sn-113, Sb-122, I-124, Sb-124,	La-140, Ce-141, Ce-143, Ce-144, Nd-147, Eu-152, Gd-153, Eu-154, Eu-155, Eu-156, Yb-169, Ta-178, Hf-181, Ta-182, W-187, Ir-192, Au-198, Hg-203, Tl-208, Pb-210, Bi-211, Pb-211, Bi-212, Pb-212, Bi-214, Pb-214, Rn-219, Ra-226, Th-227, Ac-228, Pa-231, Th-231, Th-232, Pa-234, Pa-234m,	
	Th-234, U-235, U-238, Am-241, Cm-243	

Radium 226

Radium 226	Matrix	Water
	Method	EPA 903.1
	Sample Size Container	1 Gallon Plastic
	Preservation	None - Sample must be submitted to the lab within 5 days of collection.
	Holding Time	180 days after preservation in the lab.
	Fee	76.00

Radium 228

Radium 228	Matrix	Water
	Method	EPA 904.0
	Sample Size Container	1 Gallon Plastic
	Preservation	None - Sample must be submitted to the lab within 5 days of collection.
	Holding Time	180 days after preservation in the lab.
	Fee	104.00

Uranium Isotopes by Alpha Spectroscopy

Uranium Isotopes by Alpha Spectroscopy Includes Uranium 234, Uranium 235, and Uranium 238	Matrix	Water
	Method	Standard Methods 7500-U C
	Sample Size Container	1 Gallon Plastic
	Preservation	None - Sample must be submitted to the lab within 5 days of collection.
	Holding Time	180 days after preservation in the lab.
	Fee	86.00

Plutonium Isotopes

Plutonium Isotopes Includes Plutonium 238 and Plutonium 239 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Water
	Method	DOE-RESL A-20 Alpha Spectroscopy
	Sample Size Container	1 Gallon Plastic
	Preservation	None - Sample must be submitted to the lab within 5 days of collection.
	Holding Time	180 days after preservation in the lab.
	Fee	72.00

Thorium Isotopes

Thorium Isotopes Includes Thorium 228, Thorium 230, and Thorium 232 Requires Alpha Spectroscopy Preparation procedure.	Matrix	Water
	Method	DOE-RESL A-20 Alpha Spectroscopy
	Sample Size Container	1 Gallon Plastic
	Preservation	None - Sample must be submitted to the lab within 5 days of collection.
	Holding Time	180 days after preservation in the lab.
	Fee	70.00

Strontium 89 or Strontium 90

Strontium 89 or Strontium 90	Matrix	Water
	Method	EPA 905.1
	Sample Size Container	1 Gallon Plastic
	Preservation	None - Sample must be submitted to the labwithin 5 days of collection.
	Holding Time	180 days after preservation in the lab.
	Fee	101.00

Tritium

Tritium	Matrix	Water
	Method	EPA 906.0
	Sample Size Container	1 Gallon Plastic
	Preservation	None - Sample must be submitted to the lab within 5 days of collection.
	Holding Time	180 days after preservation in the lab.
	Fee	51.00

Alpha Spectroscopy Preparation

Alpha Spectroscopy Preparation	Matrix	Water
	Method	DOE-RESL A-20 Pyrosulfate Fusion
	Sample Size Container	1 Gallon Plastic
	Preservation	None - Sample must be submitted to the lab within 5 days of collection.
	Holding Time	180 days after preservation in the lab.
	Fee	132.00

Acanthamoeba (Culture)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** 512-458-7560
Reference	
Method:	
Turnaround Time: Culture 10 days or until positive	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Eye Wash; Cornial Biopsy; Contact Lens/Fluid
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Eye washing and/or eye scraping will be examined as a direct wet smear and also set up for culture. A trichrome stained slide may be made to confirm positive specimens.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code: 87081	**Fees:**

Acanthamoeba (Microscopic-Direct Exam; Trichrome Stained Slide)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** 512-458-7560
Reference	
Method:	
Turnaround Time: Direct exam 24 hours	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Eye Wash; Cornial Biopsy; Contact Lens/Fluid
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Eye washing and/or eye scraping will be examined as a direct wet smear and also set up for culture. A trichrome stained slide may be made to confirm positive specimens.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code: 87209	**Fees:**

Acquired Immune Deficiency Syndrome

Related Agents: AIDS, HIV-1, HIV-2

Test Includes: Enzyme Assay Screen for HIV-1, automatic reflex to the Western blot Confirmatory Assay if EIA is reactive	
Reporting	
Results Available: 2 days from receipt at lab	**Contact #s:** 512-458-7657
Reference	
Method: Enzyme Assay / Western Blot	
Turnaround Time: 1-2 days	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL serum	**Preferred Specimen:** Serum
Collection/Preservation: Collect blood by venipuncture, specimen held at Ambient (Room) temperature. Specimen may be submitted on the blood clot or the serum may be separated and placed in a sterile screw cap tube for shipment.	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red or tiger top vacutainer tube
Sample Test Kit:	**Availability:** Test run Monday - Friday
Diagnostic Information: Test for infections by opportunistic organisms are offered. See specific diseases. For antibody detection see under HIV-1.	
Specimen Submission	
Required Request Form: G-2A 86701, 86689	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86701, 86689	**Fees:**

Actinomycosis (Aerobic Culture - Isolation)

Names of Related Agents: Nocardia species, Actinomadura species, etc
Test Includes: Isolation of actinomycete and identification by biochemical and physiological tests

Reporting	
Results Available: 30-50 days	**Contact #s:** 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Biochemical and physiological tests	
Turnaround Time: 30 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Exudate, Tissue, Sputum, Spinal Fluid
Collection/Preservation: No preservative.	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL sterile saline to tissue if needed to maintain moisture during transport.
Sample Test Kit:	**Availability:** Testing available upon approval by Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C Preferred for non-sterile specimens	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87106	**Fees:**

Actinomycosis (Aerobic Culture - Identification)

Names of Related Agents: Nocardia species, Actinomadura species, etc

Test Includes: Various biochemical and physiological tests for identification to species level	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-458-7586
Reference	
Method: Biochemical testing	
Turnaround Time: 21-28 days	**Reference Range:** By report
Limitations: Some genera and species can only be differentiated with molecular analysis that is not available at TDSHS.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservatives	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday - Friday
Diagnostic Information: Aerobic culture submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory. Isolates may be forwarded by TDSHS laboratory to reference laboratory for susceptibility testing. A handling fee may be charged. Testing at other reference laboratories is subject to fees charge by those laboratories.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87106	**Fees:**

Adenovirus (Culture-Isolation)

Test Includes: Cell Culture	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-458-7594
Reference	
Method: Cell Culture	
Turnaround Time: 2-14 days	**Reference Range:** No virus isolated
Limitations:	**Interpretation:** A result of "No virus isolated" does not necessarily mean absence of a viral agent. The success of virus isolation depends a great deal on the submission of the proper specimen, collected at the right time, adequately maintained, and shipped with the least possible delay.
Specimen Requirements	
Specimen Collection: Specimens should be collected at an appropriate anatomic site and at the proper time after infection because infectious agents are generally shed for only a short period of time. Refer to the Specimen Collection by Type table for additional instructions.	**Sample Type:** See preferred specimen
Volume/Amount Required: Swabs in 2-4 mL of viral transport media, 10-20 mL of urine, or 2-4 grams of stool.	**Preferred Specimen:** Throat Swab; NP Swab: Conjunctival Swab; Urine; Stool
Collection/Preservation:	**Storage Instructions:** Arriving < 3-4 days after collection, store and send at 2-8° C. Arriving > 3-4 days after collection, store and send at -70° C.
Causes for Rejection: Specimens submitted on a preservative such as formalin.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: A variety of cell monolayers which support the growth of adenoviruses are inoculated and observed for 10 days. If characteristic CPE is observed, confirmation of identification will be performed.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Universal precautions
Transport Temperature: Arriving less than 3-4 days: send at 2-8°C, Arriving greater than 3-4 days: send on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87253	**Fees:**

Adenovirus (Culture-Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-458-7594
Reference	
Method: Immunofluorescence	
Turnaround Time: 2-14 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: Fill monolayer tube with media if transporting at ambient temperature. If transporting on dry ice, send 1-2 mL.	**Preferred Specimen:** Cell culture isolate with CPE.
Collection/Preservation:	**Storage Instructions:** If shipment of isolate will be delayed, store at -70° C.
Causes for Rejection:	**Sample Container:** Cell culture tube or sterile cryovial.
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Identification is based on immunofluorescence test using adeno-specific monoclonal antibody.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Cell culture tube with CPE: ambient temperature. Frozen isolate: on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252	**Fees:**

Adenovirus (Culture-Typing)

Test Includes: Serum neutralization	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-458-7594
Reference	
Method: Serum neutralization	
Turnaround Time: 21-28 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: Fill monolayer tube with media if transporting at ambient temperature. If transporting on dry ice, send 1-2 mL.	**Preferred Specimen:** Cell culture isolate with CPE.
Collection/Preservation:	**Storage Instructions:** If shipment of isolate will be delayed, store at -70°C.
Causes for Rejection:	**Sample Container:** Cell culture tube or sterile cryovial.
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Typing is based on neutralization using type-specific antisera and is done only for epidemiologic purposes. Typing requests must have prior approval. Virology – (512) 458-7594	
Specimen Submission	
Required Request Form: G-2A (please indicate prior approval for submission has been obtained on G-2A form)	**Specimen Handling:**
Transport Temperature: Monolayer with CPE: Ambient temperature. Frozen isolate: on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87301	**Fees:**

Aerobic Bacterial Culture (Isolation)

Test Includes: Conventional biochemical methods.	
Reporting	
Results Available:7-21 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemical methods.	
Turnaround Time: 7-21 days dependent on organism(s) isolated.	**Reference Range:** None isolated
Limitations: Quality of specimen collection will affect the ability to isolate pathogenic organisms from clinical specimens.	**Interpretation:** Interpretation of test results is dependent on the organism isolated and the clinical history of the patient.
Specimen Requirements	
Specimen Collection: **Intestinal specimens:** Should be obtained early in course of illness. Freshly passed stools are better than rectal swabs. **Blood:** Should be collected by venipuncture in a tiger top or red top vacutainer	**Sample Type:** Blood; Body fluids; Bone marrow; CSF; Stool; Sputum; Throat swab; Tissue; Wound exudates
Volume/Amount Required: CSF 1-2 mL, Stool- 25 grams, Rectal swabs -visible fecal material on swab, blood -2-5 mL; tissue -small piece; bone marrow- small amount;	**Preferred Specimen:** Blood, Body fluids, Bone marrow, CSF, Stool, sputum, throat swab, tissue, wound exudates
Collection/Preservation: Collect blood by venipuncture, specimen held at ambient temperature.	**Storage Instructions:** Do not freeze or refrigerate whole blood. Keep stools, tissue, body fluids, bone marrow, wound exudates, and sputum at 2-8°C.
Causes for Rejection: Insufficient amount of sample to test due to leakage or other circumstances; no identifying marks on sample and/or paperwork; name discrepancies, expired transport media.	**Sample Container:** **Stool-** sterile feces container **Rectal swab**- Aimes, Stuart's or Cary-Blair transport tube **Blood:** Tiger top or red top vacutainer **Body fluids:** Sterile collection tube
Sample Test Kit:	**Availability:** Tested Monday - Friday
Diagnostic Information: Please indicate suspected organism(s) when submitting specimen. Culture includes the isolation and identification of the predominant organism or pathogen(s). Specimens should be collected in the acute phase of infection. Transport to the laboratory as soon as possible, usually within 48 hours. Sterile body fluids such as CSF and blood do not require any transport medium and should not be diluted.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle as body fluid taking universal precautions.

Transport Temperature: 2-8°C (refrigerated), <24 hours unless in transport medium.	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87081 (screening), 87040, 87045, 87046, 87070, 87071, 87073 87077, 87143, 87147, 87181, 87205, 87206, 87210, 87278, 87430, 87449	**Fees:**

Aerobic Bacterial Culture, Stool (Isolation)

Test Includes: Conventional biochemicals, EHEC Toxin test, PCR	
Reporting	
Results Available: 3-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemical studies, EHEC Toxin test, PCR for virulence factors.	
Turnaround Time: 3-7 days depedent on organism(s) isolated.	**Reference Range:** Negative for enteric pathogens.
Limitations: Stools must be collected before antibiotic treatment is initiated for greatest chance of isolation of pathogens. Stool specimens must be in enteric preservative or shipped immediately overnight on ice packs. Preservatives used for parasite examinations are not acceptable for bacteriological examinations.	**Interpretation:** *Salmonella species, Shigella species, E. coli O157:H7, Shiga toxin producing E. coli; Campylobacter species, Vibrio species, Yersinia enterocolitica, Aeromonas species* should be considered significant findings. Significance of other enteric organisms should be determined based on clinical information.
Specimen Requirements	
Specimen Collection: Collection of fresh stool.	**Sample Type:** Stool; rectal swabs.
Volume/Amount Required: >10mL for liquid stools; > 20 g solid or semi-solid stools.	**Preferred Specimen:** Stool in enteric transport media or on ice packs.
Collection/Preservation: Collect in appropriate container to avoid leakage and keep between 2-8°C. If not transported to the laboratory within 24 hours of collection, transfer specimen to an enteric transport media before transporting to the laboratory.	**Storage Instructions:** Keep stools between 2-8°C.
Causes for Rejection: Submitted for culture studies: Unpreserved specimens not received on ice packs or > 24 hours old. Received in transport media not recommended for bacterial isolation or expired transport media. Submitted for toxin studies: Specimen > 7 days old unless frozen at -70°C.	**Sample Container:** Sealable container that will avoid leakage; Transport media containers such as Cary-Blair, Aimes, or Stuart's transport.
Sample Test Kit:	**Availability:** Routinely Tested Monday – Friday. Outbreak investigations may include testing outside these routine test dates.
Diagnostic Information: Stool culture for isolation of Salmonella, Shigella, Campylobacter, Yersinia, Enterotoxigenic E. coli, E. coli O157:H7; Vibrio is performed by TDSHS in outbreak situations through TDSHS IDEAS department only. Toxin Testing for Shiga toxin E. coli is available upon request. See Escherichia coli 0157:H7 or other Shiga toxin E. coli (Toxin Testing). Please indicate suspected organism(s) when submitting specimen. Culture includes the isolation and identification. Specimens should be collected in the acute phase of infection.	

Transport to the laboratory as soon as possible, usually within 48 hours	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Body fluids must be handled using universal precautions. Specimens should be collected in the acute phase of infection. Transport to the laboratory as soon as possible, within 24 hours unless in transport media.
Transport Temperature: 2-8° C, 24 hours	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Codes: 87081 (screening), 87040, 87045, 87046, 87070, 87071, 87073 87077, 87143, 87147, 87181, 87205, 87206, 87210, 87278, 87430, 87449	**Fees:**

Aerobic Bacterial Culture, (Identification)

Test Includes: Conventional biochemicals for identification.	
Reporting	
Results Available: 4-21 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals	
Turnaround Time: 4-21 days dependent on organism(s)	**Reference Range:** By report
Limitations: Specimens must be collected before antibiotic treatment is initiated for greatest chance of isolation of pathogens. Routine susceptibilities are not performed at TDSHS. The only antimicrobial susceptibilities offered are: confirmation of vancomycin resistant Enterococcus and Staphylococcus species and limited testing on Neisseria gonorrhoeae. These test results are for epidemiological purposes only and cannot be used for patient care.	**Interpretation:** By report dependent on organism identified.
Specimen Requirements	
Specimen Collection: Dependent upon type of specimen to be tested.	**Sample Type:** Pure culture
Volume/Amount Required: One slant, broth, deep, or plate.	**Preferred Specimen:** Pure Culture
Collection/Preservation: May be kept at ambient temperature.	**Storage Instructions:** Store at temperature and atmospheric conditions that are suitable for growth dependent on organism.
Causes for Rejection: Insufficient amount of sample to test; no identifying markers on sample and/or paperwork.	**Sample Container:** Agar slant, handled as infectious agent.
Sample Test Kit:	**Availability:** Tested Monday - Friday
Diagnostic Information: Gram-negative rods, Gram-positive cocci, Gram-positive rods. Identification of the organism includes serological studies if the organism is one of the following microbes: See Salmonellosis Culture –(Typing), see Shigellosis Culture (Typing), see Meningitis, Meningococcal Culture (Grouping) and see Escherichia coli 0157:H7 or other Shiga toxin E. coli Culture (Typing). Serological typing or grouping of additional microbes can be arranged with the CDC in the event of community or nosocomial outbreaks. Routine susceptibilities are not performed at TDSHS. The only antimicrobial susceptibilities offered are: confirmation of vancomycin resistant Enterococcus and Staphylococcus species and limited testing on Neisseria gonorrhoeae. These test results are for epidemiological purposes only.	

Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handled as infectious agent using universal precautions.
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87081 (screening), 87040, 87045, 87046, 87070, 87071, 87073 87077, 87143, 87147, 87181, 87205, 87206, 87210, 87278, 87430, 87449	**Fees:**

Amebiasis (Entamoebia historlytica/Entamoeba disbar (Culture -Isolation)

Test Includes: Culture	
Reporting	
Results Available: 10 days or when positive results is determined.	**Contact #s:** (512) 458-7560
Reference	
Method:	
Turnaround Time: Cultured for up to 10 days	**Reference Range:** No parasites found
Limitations: Parasite must be viable for culture isolation	**Interpretation:** Negative test results indicates there are no detectable parasites in specimen.
Specimen Requirements	
Specimen Collection: Stools should be collected and be < 5 hours old. Liver and organ aspirates should be aseptically collected.	**Sample Type:** Feces (fresh, less than five hours), liver or other organ aspirates
Volume/Amount Required: Stool >20 g solid or > 10 mL liquid. Aspirates 1-2 mL.	**Preferred Specimen:** Feces < 5 hrs, preservative; Liver or organ aspirates
Collection/Preservation: Ambient temperature	**Storage Instructions:** Ambient temperature
Causes for Rejection: Incorrect demographic information; Specimen too old.	**Sample Container:** Sterile leakproof container or transport for parasites.
Sample Test Kit: n/a	**Availability:** Test performed Monday-Friday
Diagnostic Information: Fecal specimens must be sent in as a fresh unpreserved specimen. PVA and formalin preserved specimens cannot be used for culture. Referred material accepted from hospital, private, and reference laboratories.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Body fluids using universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87081	**Fees:**

Amebiasis Entamoeba histolytical/Entamoeba disbar Staining (Identification)

Test Includes: Concentration and trichrome staining	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: direct microscopic examination, concentration and trichrome stain,	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations: The ability to detect parasites is limited by the quality of the specimen collection.	**Interpretation:** Negative test results indicates there are no detectable parasites in specimen.
Specimen Requirements	
Specimen Collection: Specimens should be collected during acute phase of illness if possible. If cannot be transported to laboratory within 5 hours, specimens should be placed in PVA and formalin immediately	**Sample Type:** Feces (fresh, less than five hours), PVA and formalin preserved feces
Volume/Amount Required: >20 g fresh stool; follow instructions for PVA and formalin transport media.	**Preferred Specimen:** Feces (fresh, less than five hours), PVA and formalin preserved feces
Collection/Preservation: Collect stool during acute or symptomatic phase of illness if possible.	**Storage Instructions:** ambient temperature
Causes for Rejection: Specimen too old	**Sample Container:** PVA and formalin transport containers; sterile specimen container.
Sample Test Kit: n/a	**Availability:** Test performed Monday-Friday
Diagnostic Information: Fecal specimens must be sent in fresh (less than five hours from being passed) or PVA and formalin for concentration and trichrome staining. Referred material accepted from hospital, private, and reference laboratories.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Body fluids handled using universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87207	**Fees:**

Amebiasis Entamoeba histolytica/Entamoeba disbar (Serological - Forwarded by TDSHS to CDC for testing)

Test Includes: Test not performed at TDSHS, specimen forwarded to the CDC for testing.	
Reporting	
Results Available:	**Contact #s:** (512) 458-7560
Reference	
Method:	
Turnaround Time: 3 weeks	Reference Range: Negative
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: Collect blood by venipuncture, specimen held at ambient temperature. Separate serum and place in a sterile screw cap tube for shipment.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Clinical symptoms not consistent with amebiasis or detailed patient history not available for the CDC submission.	**Sample Container:** Red or tiger top vacutainer
Sample Test Kit:	**Availability:** Specimens forwarded to the CDC Monday – Friday.
Diagnostic Information: Serologic studies may be helpful in the diagnosis of invasive intestinal and extraintestinal amebiasis. Asymptomatic cyst passers usually have negative serologic tests. Eighty-five percent of patients with biopsy proven invasive intestinal amebiasis are antibody positive whereas 95-100% of patients with extra-intestinal amebiasis are positive. Values may remain elevated 6 to 18 months after invasive disease. Prior notification is requested (512) 458-7611. A detailed patient history is required. Referred material accepted from hospital, private, and reference laboratories. However, since antibodies may persist for years after clinical cure, a reactive test may not indicate active infection.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Body fluids handled using universal precautions
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87336	**Fees:**

Anaerobic Bacterial Culture, Special (Isolation)

Test Includes: Rapid ANA II, API AnaID, GLC, conventional biochemicals	
Reporting	
Results Available: 7-14 days	**Contact #s:** (512) 458-7582
Reference	
Method: Rapid ANA II, API AnaID, GLC, conventional biochemicals	
Turnaround Time: 7-14 days	**Reference Range:** No anaerobes isolated
Limitations: Transport method must be suitable for anaerobic conditions or organisms may not be viable for testing. Culture results may require additional clinical information about how specimen was obtained. Since many of these organisms are members of endogenous flora of the skin, oral cavity, genital tract, and gut, contamination by the normal flora during specimen acquisition is often a problem.	**Interpretation:** Interpretation of culture results may require additional clinical information about how the specimen was obtained.
Specimen Requirements	
Specimen Collection: Needle aspirates, abscess drainage. Swab collection is discouraged.	**Sample Type:** Deep wounds; sterile fluids; abscess material.
Volume/Amount Required: aspirates or drainage >1mL. Tissues: small piece	**Preferred Specimen:** Deep wounds, sterile fluids, abscess material, tissue in anaerobe transport (stools for botulism only)
Collection/Preservation: Must be collected and shipped under anaerobic conditions.	**Storage Instructions:** Store under anaerobic conditions.
Causes for Rejection: Shipped under aerobic conditions; no identifying markers on sample and/or paperwork,	**Sample Container:** Sterile specimen collector designed to maintain anaerobic atmosphere
Sample Test Kit: Rapid ANA, API ANAID	**Availability:** Tested Monday – Friday
Diagnostic Information: Please indicate suspected organism(s) when submitting specimen. Culture includes the identification of the predominant organism or pathogen(s). For *Clostridium botulinum* see Botulism Culture –(Isolation).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handled as body fluids using universal precautions.
Transport Temperature: 2-8° C	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87073, 87075	**Fees:**

Anaerobic Bacterial Culture (Identification)

Test Includes: Rapid ANA II, API anaID, GLC, conventional biochemicals	
Reporting	
Results Available: 7-14 days	**Contact #s:** (512) 458-7582
Reference	
Method: Rapid ANA II, API anaID, GLC, conventional biochemicals.	
Turnaround Time: 7-14 days	**Reference Range:** By report
Limitations: Transport method must be suitable for anaerobic conditions or organisms may not be viable for testing.	**Interpretation:** Interpretation of culture results may require additional clinical information about how the specimen was obtained.
Specimen Requirements	
Specimen Collection: Dependent upon type of specimen to test.	**Sample Type:** Pure culture under anaerobic conditions.
Volume/Amount Required: one specimen isolate per patient	**Preferred Specimen:** Pure Culture under anaerobic conditions.
Collection/Preservation: Must be collected under anaerobic conditions.	**Storage Instructions:** Store under anaerobic conditions, ambient temperature.
Causes for Rejection: Shipped under aerobic conditions.	**Sample Container:** Anaerobic containers required.
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: Please indicate suspected organism(s) when submitting specimen. Anaerobic bacteria referred to TDSHS for complete identification or confirmation. Routine susceptibilities are not performed at TDSHS	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Specimen handled as Infectious agent
Transport Temperature: Ambient temperature.	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87075	**Fees:**

Anaerobic Bacterial Toxin Detection (Isolation)

Test Includes: Small animal inoculation, conventional biochemicals, Rapid ANA, API anaID	
Reporting	
Results Available: 2-10 days	**Contact #s:** (512) 458-7185
Reference	
Method: Small animal inoculation, conventional biochemicals, Rapid ANA, API anaID	
Turnaround Time: 2-10 days	**Reference Range:** No toxin detected
Limitations: Ability to determine presence of toxin is dependent on ability to demonstrate protection with antitoxin.	**Interpretation:** No toxin detected indicates that there was no detectable toxin present in the specimen for *Clostridium botulinum*. This does not preclude other bacterial toxins.
Specimen Requirements	
Specimen Collection: venipuncture, bowel movement, water enema	**Sample Type:** Stool, serum
Volume/Amount Required: 15-20 mL serum 25-50 g stool; infant botulism: 2 mL serum, as much stool as possible.	**Preferred Specimen:** Stool, Serum
Collection/Preservation: Specimens	**Storage Instructions:** 2-8° C
Causes for Rejection: Clinical history not consistent with botulism or no clinical history provided. Insufficient sample.	**Sample Container:** Tightly sealed, sterile leak proof container; sterile screw cap tube for serum
Sample Test Kit: Rapid ANA; API anaID	**Availability:** Routinely Monday-Friday, With telephone notification Saturday-Sunday
Diagnostic Information: *Clostridium botulinum, Clostidium septicum*, See Botulism Culture – (Isolation)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handled as infectious and toxic agent using universal precautions. (C botulinum toxin is one of the most powerful natural toxins known)
Transport Temperature: 2-8°C	**Shipping Requirements:** Overnight shipment, Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87001	**Fees:**

Anaerobic Bacterial Toxin Detection (Identification)

Test Includes: Small animal inoculation, conventional biochemicals, Rapid ANA, API anaID	
Reporting	
Results Available: 2-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: Small animal inoculation, conventional biochemicals, Rapid ANA, API anaID	
Turnaround Time: 2-10 days	**Reference Range:** No toxin detected
Limitations: Culture must be viable	**Interpretation:** No toxin detected indicates that there was no detectable toxin present in the specimen.
Specimen Requirements	
Specimen Collection: n/a	**Sample Type:** Pure culture
Volume/Amount Required: one isolate per patient	**Preferred Specimen:** Pure cultures, 24 hour growth
Collection/Preservation: Isolated should be maintained for viability until shipment has been verified.	**Storage Instructions:** ambient temperature
Causes for Rejection: Specimen broken, transported aerobically.	**Sample Container:** Anaerobic transport tube or plate system.
Sample Test Kit: Rapid ANA, API anaID	**Availability:** Test performed Monday-Friday
Diagnostic Information: Clostridium botulinum see Botulism Culture (Toxin Detection), Clostidium septicum, Clostridium tetani, see Tetanus (Culture – Identification)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87001	**Fees:**

Anthrax Culture (Isolation)

Test Includes: Conventional biochemical methods, PCR, DFA	
Reporting	
Results Available: 3-5 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemical methods, PCR, DFA	
Turnaround Time: Preliminary 1 day after receipt; Final 3-5 days after receipt	**Reference Range:** None isolated
Limitations: Quality of specimen collection will affect the ability to isolate pathogenic organisms from clinical specimens.	**Interpretation:**
Specimen Requirements	
Specimen Collection: Intestinal specimens: Should be obtained early in course of illness. Freshly passed stools are better than rectal swabs.	**Sample Type:** Exudate; Blood; Sputum; CSF; Tissue
Volume/Amount Required:	**Preferred Specimen:** Exudate; Blood; Sputum
Collection/Preservation:	**Storage Instructions:** Do not freeze or refrigerate whole blood. Keep stools, tissue, body fluids, wound exudates, and sputum at 2-8°C.
Causes for Rejection: Insufficient amount of sample to test due to leakage or other circumstances; no identifying marks on sample and/or paperwork; name discrepancies.	**Sample Container:** Stool- sterile feces container Rectal swab: Aimes, Stuart's or Cary Blair transport tube Blood: Tiger top vacutainer Body fluids: Sterile collection tube
Sample Test Kit:	**Availability:** Tested Monday-Friday. With notification Saturday and Sunday.
Diagnostic Information: Prior notification is requested. (512) 458-7185. Bioterrorism Investigation Section. CDC serology available only with prior approval and with submission of patient history. Reports of confirmed *Bacillus anthracis* will be called to the submitter immediately upon completion of testing. Please insure that an accurate telephone number and contact name is included on the submission form. For suspected Bioterrorism agents, see Bioterrorism agents (Clinical -Isolation).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Universal precautions
Transport Temperature: 2-8°C	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87076	**Fees:**

Anthrax Culture (Identification)

Test Includes: Conventional biochemical methods, PCR, DFA	
Reporting	
Results Available: 3-5 days	**Contact #s:** (512) 458-7185
Reference	
Method: Conventional biochemical methods, PCR, DFA	
Turnaround Time: Preliminary 1 day after receipt; Final 3-5 days after receipt	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: Dependent upon type of specimen to be tested.	**Sample Type:** Pure culture
Volume/Amount Required: 1 slant or agar plate	**Preferred Specimen:** Pure Culture safely contained
Collection/Preservation: Ambient temperature	**Storage Instructions:** Store at temperature and atmospheric conditions that are suitable for growth dependent on organism.
Causes for Rejection: Insufficient amount of sample to test; no identifying markers on sample and/or paperwork.	**Sample Container:** Agar slant, handled as infectious agent.
Sample Test Kit:	**Availability:** Tested Monday-Friday
Diagnostic Information: Prior notification is requested. (512) 458-7185. Bioterrorism Investigation Section. CDC serology available only with prior approval and with submission of patient history. Reports of confirmed *Bacillus anthracis* will be called to the submitter immediately upon completion of testing. Please insure that an accurate telephone number and contact name is included on the submission form. For suspected Bioterrorism agents, see Bioterrorism agents (Referred -identification) For PCR testing see: Bioterrorism agents (Referred Identification - PCR).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handled as infectious agent using universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87073, 87075	**Fees:**

Anthrax (Serological)

Test Includes: EIA for total anthrax antibodies	
Reporting	
Results Available: 3 weeks	**Contact #s:**512-458-7760
Reference	
Method: EIA	
Turnaround Time: 3 weeks	**Reference Range:** <1.00
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Serum, Paried Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze whole blood. Separate serum from the clot if possible store in a screw cap vial
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, hemolysis	**Sample Container:** red top or tiger top vacutainer
Sample Test Kit:	**Availability:** Specimen will be sent to the CDC in Atlanta
Diagnostic Information: Prior notification is requested, 512-458-7760. A single serum specimen is acceptable, however, in order to determine if it is a recent infection, an acute and convalescent specimen drawn at least 14-16 days apart is necessary. A detailed patient history is required. Forwarded by TDSHS to CDC for testing.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 87001	**Fees:**

Arbovirus (Culture-Isolation)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 5-15 days	**Reference Range:** No virus isolated
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Brain, Blood/Serum (See notes)
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Host systems which support the growth of a variety of arboviruses (including California Group, Eastern Equine, St. Louis, Venezuelan Equine, Western Equine Encephalitis, and West Nile viruses) are inoculated and observed for 10-14 days. If signs of viral infection are detected, identification tests will be performed. For arboviral surveillance program, see Mosquitoes (Culture - Virus Isolation).	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: 86790, 86652, 86653, 86654, 86651	**Fees:**

Arbovirus (Culture-Identification)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 5-14 days	**Reference Range:** By Report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Clinical isolate
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Identification is based on immunofluorescence tests.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: 86790, 86652, 86653, 86654, 86651	**Fees:**

Arizona Salmonella (Arizona) Culture (Isolation)

Test Includes: Conventional biochemicals, serological typing	
Reporting	
Results Available: 3-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals, serological typing	
Turnaround Time: 3-7 days	**Reference Range:** No *Salmonella (Az.)* isolated
Limitations: Specimen should be collected before antibiotic treatment has been initiated.	**Interpretation:** A preliminary report can be issued as soon as a presumptive identification of Salmonella is obtained through either biochemical or serological "O" studies. A confirmed identification is issued when both biochemical and serological methods are completed.
Specimen Requirements	
Specimen Collection: Passed liquid or stool, venipuncture	**Sample Type:** feces, rectal swab, blood (typhoid fever)
Volume/Amount Required: > 2 mL or 10 g	**Preferred Specimen:** 10 g fresh stool in enteric transport, blood (typhoid fever)
Collection/Preservation: Collect passed liquid or stool into a clean, dry container. Transport < 24 hours, 4°C. If unable to transport within 24 hours, place in enteric transport, 4°C or ambient temperature. Blood: Collect blood by veni-puncture, specimen held at ambient temperature.	**Storage Instructions:** 4°C < 24 hours.
Causes for Rejection: Unpreserved and > 4°C for > 24 hours.	**Sample Container:** Sterile feces container or clean, dry container. Enteric transport collector.
Sample Test Kit: n/a	**Availability:** Mon-Fri. Outbreak investigations with prior notification: Sat-Sun.
Diagnostic Information: Fecal specimens are accepted only with prior approval. Isolates will be identified as Salmonella species. See Salmonellosis Culture –(Typing). Cultures include selective and enrichment procedures for isolation of *Campylobacter, Vibrio, Salmonella, Shigella, Yersinia, E. coli O157:H7, and* Toxigenic *E. coli.*	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Body fluids using universal precautions.
Transport Temperature: 2-8° C	**Shipping Reqs:** Triple contained in accordance with federal shipping regs. for diagnostic specimens.
Billing	
CPT Code: 87045	**Fees:**

Arizona Salmonella (Arizona) Culture (Identification)

Test Includes: Conventional Biochemical studies, Serological typing, Pulse-Field Gel Electrophoresis	
Reporting	
Results Available: 7-14 days	**Contact #s:** (512) 458-7784
Reference	
Method: API 20E, Conventional biochemicals, Serological typing "O" , "H" , and Vi determination, Pulse-Field Gel Electrophoresis	
Turnaround Time: 7-14 days	**Reference Range:** By Report
Limitations: Organism must be viable and in pure culture.	**Interpretation:** Determination of the "O" and "H" antigens allows for complete serological typing of the organism. Pulse-Field Gel Electrophoresis is performed to determine relatedness to other strains identified.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: One specimen per patient	**Preferred Specimen:** Pure culture on agar slant
Collection/Preservation: 24 hour growth on agar slant	**Storage Instructions:** Ambient temperature
Causes for Rejection: Broken specimen	**Sample Container:** Agar slant in test tube.
Sample Test Kit:	**Availability:** Test performed Monday-Friday
Diagnostic Information: Organisms will be identified as *Salmonella* species. See Salmonellosis Culture –(Typing)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agents handled using universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87045	**Fees:**

Ascariasis (Microscopic - Direct Concentration)

Test Includes: Microscopic examination, direct concentration	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 458-7760
Reference	
Method: Microscopic examination, direct concentration	
Turnaround Time: 24 hours	**Reference Range:** No parasites found
Limitations: Parasites or ova must be visible under microscopic examination.	**Interpretation:** No parasites found indicates that there were no visually detectable parasites in the specimen.
Specimen Requirements	
Specimen Collection: Fecal specimens must be sent in as fresh (less that five hours) or in formalin.	**Sample Type:** Feces; Worm; Sputum; Tissue Section
Volume/Amount Required: stool 10 g	**Preferred Specimen:** Feces; Worm; Sputum; Tissue Section
Collection/Preservation: Fecal specimens must be sent in as fresh (less that five hours) or in formalin.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Specimen not preserved and too old.	**Sample Container:** Clean, dry container, tightly sealed.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Detection of eggs in fecal specimens must be sent in as fresh (less that five hours) or in formalin. Adult worms should be submitted in ethyl alcohol or formalin. Referred material accepted from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Body fluids handled with universal precautions. Formalin is a poison, handle with caution.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87177	**Fees:**

Aspergillosis (Culture - Isolation)

Test Includes: Isolation of fungus and identification of Aspergillus species by morphological tests	
Reporting	
Results Available: 28 days	**Contact #s:** 512-458-7455 for prior approval. Technical questions: 512-458-7586
Reference	
Method: Slide culture	
Turnaround Time: 21-28 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** exudate; Tissue; Sputum
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL sterile saline if needed to maintain moisture of tissue during transport.
Sample Test Kit:	**Availability:** Testing available upon approval by Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87101, 87102, 87103	**Fees:**

Aspergillosis (Culture-Identification)

Test Includes: Morphological examination and/or physiological tests for identification of isolate	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-458-7586
Reference	
Method: Slide culture	
Turnaround Time: 7-10 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative	**Storage Instructions:**
Causes for Rejection: Infestation with mites	**Sample Container:** Triple-contained
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday - Friday
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87101, 87102, 87103	**Fees:**

Aspergillosis (Serological - Immundiffusion)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 5-7 days	**Reference Range:** Negative
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: 2 mL serum/CSF	**Preferred Specimen:** Single Serum; Spinal Fluid
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Tests are performed with standardized antigens of Aspergillusflavus, A. niger and A. fumigatus. Positive results, represented by one or more precipitin lines are indicative of fungus ball, bronchopulmonary aspergillosis (ABA) or invasive aspergillosis. One or two bands are present in any clinical phase; three or more bands indicate invasive disease. Test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.
Billing	
CPT Code: 86606	**Fees:**

Babesiosis (Serological - Forwarded by TDSHS to CDC for Testing)

Test Includes: Assay for immune response to Babesiosis Infection	
Reporting	
Results Available: 3 weeks	**Contact #s:** 512-458-7614
Reference	
Method: EIA	
Turnaround Time: 3 weeks	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: red of tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** red or tiger top tube
Sample Test Kit:	**Availability:** Specimen sent to CDC for testing
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum specimens are forwarded to the CDC. Testing is done by indirect immunofluorescence. Definitive diagnosis is made by identifying intraerythrocytic organisms in peripheral blood. Cross-reactions may occur with malaria.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86753	**Fees:**

Babesiosis (Microscopic - Stain)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 24 hours	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Blood; think and thick film, EDTA antiicoagulant is acceptable.
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Anticoagulants such as EDTA in venous blood specimens can interfere with parasite morphology and staining characteristics, this can be further compounded by excessive delay prior to making smears. In such cases capillary blood samples are preferable (finger sticks). If venous blood is used at least 2 thin and 2 thick smears should be made within 1 hour.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code: 87207	**Fees:**

Bacillus anthracis (Culture - Isolation)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:** None isolated
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** 14 days
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: See Anthrax Culture (Isolation) For Bioterrorism agents, See Bioterrorism agents (Clinical -Isolation).	
Specimen Submission	
Required Request Form:	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: 87073, 87075	**Fees:**

Bacillus cereus (Culture-Isolation)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 2-14 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals	
Turnaround Time: 14 days	**Reference Range:** None Isolated
Limitations: Organism must be viable.	**Interpretation:** No *Bacillus cereus* indicates that there was no viable organism present. It does not rule out the presence of toxin produced by the organism.
Specimen Requirements	
Specimen Collection: Food samples only	**Sample Type:** food
Volume/Amount Required: 25 grams of food for each pathogen to be tested.	**Preferred Specimen:** 25 grams of food for each pathogen to be tested.
Collection/Preservation: Food samples collected by sanitarian, stored at 4-8° C	**Storage Instructions:** stored at 4-8° C
Causes for Rejection: Insufficient specimen, not collected by sanitarian, improperly stored.	**Sample Container:** whirlpaks or clean, dry containers.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: See Food Poisoning (Culture - Isolation)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle in accordance with FDA protocols for collection and handling of specimens for food testing. A chain of custody form is necessary in the event of an incident involving the legal authorities.
Transport Temperature: 4-8° C	**Shipping Requirements:** Leak proof container
Billing	
CPT Code: 87076	**Fees:**

Balantidiasis (Microscopic - Direct Concentration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations: Fecal specimens must be sent fresh (less than 5 hours) or in PVA and formalin preservative.	**Interpretation:**
Specimen Requirements	
Specimen Collection: feces	**Sample Type:** feces
Volume/Amount Required: 10-20 grams	**Preferred Specimen:** Feces (less than 5 hours) or in PVA and formalin preservativees.
Collection/Preservation: Fecal specimens must be sent fresh (less than 5 hours) or in PVA and formalin preservative.	**Storage Instructions:** Ambient temperature
Causes for Rejection: unpreserved specimen > 5 hours old.	**Sample Container:** Clean, dry container or PVA and formalin transport tubes
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Fecal specimens must be sent fresh (less than 5 hours) or in PVA and formalin preservative. Referred material accepted from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Body fluids handled with universal precautions. Formalin and PVA are poisonous. Handle with caution.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87177	**Fees:**

Baywaters (Environmental)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 458-7611
Reference	
Method: Conventional biochemicals	
Turnaround Time: 1 day	**Reference Range:** Negative
Limitations: Baywaters must be collected and maintained at 0-10°C	**Interpretation:** Negative test results indicate that the detectable bacterial level is below the threshold considered reportable.
Specimen Requirements	
Specimen Collection: Baywaters	**Sample Type:** Baywaters
Volume/Amount Required:	**Preferred Specimen:** Baywaters
Collection/Preservation: Collected by Seafood safety division, 0-10° C	**Storage Instructions:** 0-10° C
Causes for Rejection: Temperature control out of range. Insufficient sample for testing.	**Sample Container:** Water bottle provided by Seafood Safety.
Sample Test Kit: n/a	**Availability:** Monday-Friday. Saturday-Sunday as required by program with prior notification
Diagnostic Information: Submission of samples accepted only from Seafood Safety Division with prior notification.	
Specimen Submission	
Required Request Form: Seafood safety line listing	**Specimen Handling:** In accordance with FDA Shellfish regulations for bay water testing.
Transport Temperature: 0-10° C	**Shipping Requirements:** Leakproof container shipped at appropriate temperature (0-10° C) with temperature control bottle enclosed.
Billing	
CPT Code: No code	**Fees:**

Bioterrorism agents (Environmental - Isolation)

Test Includes: Conventional biochemicals, PCR, DFA, Time-resolved Fluorescence	
Reporting	
Results Available: 3-5 days	**Contact #s:** 512-458-7185
Reference	
Method:	
Turnaround Time: Preliminary report 1 day, Final report 3-5 days.	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Suspicious powders, packages, triple contained to prevent leakage.
Volume/Amount Required:	**Preferred Specimen:** Powders triple contained to prevent leakage.
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Submission of suspected powders, packages, etc. must be made through the local EMS, Police, or FBI office. NO submissions will be accepted from private citizens. Contact laboratory at 458-7185 before submission. Packages must be screened by the authorities for the presence of explosives, poisons, radioactivity, and flammable, oxidizing, or corrosive material. No chemical or drug testing is provided at TDSHS. Authorities submitting specimens for testing must complete a chain of custody form at TDSHS completing the required information which includes a contact person, telephone number, agency to receive the final report, person or department authorized to pick up the specimen, all identifying information, and whether the sample is to be returned or destroyed. The submitter must arrange transportation to TDSHS for testing.	
Specimen Submission	
Required Request Form: Chain of Custody	**Specimen Handling:** Universal precautions
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained and delivered by local EMS, Police, or FBI.
Billing	
CPT Code: No code	**Fees:**

Bioterrorism agents (Clinical-Isolation)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: Preliminary report 1 day for Anthrax only. Final report 3-21 days.	**Reference Range:** Absence of agent of bioterrorism requested.
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Exudate, sputum, lymph node aspirates, blood, CSF
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Contact laboratory at 458-7185 before submission. Submission of clinical specimens for testing is restricted to testing that cannot be performed at a Level A laboratory or local clinical laboratory or to specimens linked with a suspected or known outbreak or bioterroristic event. Coordination through the proper local or state health authorities is required. For Individual organisms see: Anthrax Culture (Isolation) Brucellosis Culture – (Isolation) Tularemia (Culture - Isolation) Yersinia pestis (Culture – Isolation)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: 2-8°C (refrigerated)	**Shipping Requirements:**
Billing	
CPT Code: 87081 (screening), 87040, 87045, 87046, 87070, 87071, 87073 87077, 87143, 87147, 87181, 87205, 87206, 87210, 87278, 87430, 87449, 87073, 87075	**Fees:**

Bioterrorism agents (Referred - Identification)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: Preliminary report 1 day for Anthrax only. Fianl report in 3-10 days.	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure culture, safely contained.
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Contact laboratory at 458-7185 before submission. Culture submitted will be ruled out or confirmed as the suspected agent of Bioterrorism. The final report will be telephoned to the submitter immediately when the testing has been completed. For Individual organisms see: Anthrax Culture (Isolation) Brucellosis Culture – (Isolation) Tularemia (Culture - Isolation) Yersinia pestis (Culture – Isolation)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code: 87076, 87077	**Fees:**

Bioterrorism agents (Referred Identification - PCR)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: Final report 1 day	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure culture, safely contained
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Contact laboratory at 458-7185 before submission. Culture submitted will be ruled out or confirmed as the suspected agent of Bioterrorism. The final report will be telephoned to the submitter immediately when the testing has been completed. See Anthrax Culture (Identification), see Yersinia pestis, see Franciscella tylarensis Culture, see Brucella culture.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code: 87798	**Fees:**

Blastocystis hominis (Microscopic - Driect Concentration and Trichrome stain)

Test Includes: concentration and trichrome staining	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: direct microscopic examination, concentration and trichrome stain,	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:** Negative test results indicates there are no detectable parasites in specimen.
Specimen Requirements	
Specimen Collection: Specimens should be collected during acute phase of illness if possible. If cannot be transported to laboratory within 5 hours, specimens should be placed in PVA and formalin immediately.	**Sample Type:** Feces (fresh, less than five hours), PVA and formalin preserved feces
Volume/Amount Required: >20 g fresh stool; follow instructions for PVA and formalin transport media.	**Preferred Specimen:** Feces (fresh, less than five hours), PVA and formalin preserved feces
Collection/Preservation: Collect stool during acute or symptomatic phase of illness if possible.	**Storage Instructions:** ambient temperature
Causes for Rejection: Specimen in incorrect preservative or not in preservative.	**Sample Container:** PVA and formalin transport containers; sterile specimen container
Sample Test Kit: n/a	**Availability:** Test performed Monday-Friday
Diagnostic Information: Fecal specimens must be sent in fresh (less than five hours from being passed) or PVA and formalin for concentration and trichrome staining. Referred material accepted from hospital, private, and reference laboratories.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Body fluids handled with universal precautions. Formalin and PVA are poisonous, handle with caution.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87209	**Fees:**

Blastomycosis (Culture-Isolation)

Test Includes: Isolation of fungus and identification by Gen-Probe Accuprobe test	
Reporting	
Results Available: 21-28 days	**Contact #s:**512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Accuprobe culture confirmation test; hybridization of ribosomal RNA to probe detected by chemiluminesence	
Turnaround Time: 21-28 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:** Positive by DNA Probe Test means that the probe detected ribosomal RNA of Blastomyces dermatitidis from the isolate.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Sputum, Tissue
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL of sterile saline to tissue if needed to maintain moisture during transport.
Sample Test Kit:	**Availability:** Testing available upon approval from Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87101, 87102, 87103	**Fees:**

Blastomycosis (Culture – Genetic Probe (Culture Confirmation))

Test Includes: Identification by Gen-Probe Accuprobe test.	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-458-7586
Reference	
Method: Accuprobe culture confirmation test; hybridization of ribosomal RNA to probe detected by chemiluminesence	
Turnaround Time: 7-10 days	**Reference Range:** By Report
Limitations: Positive probe test does not mean the isolate is still viable.	**Interpretation:** Positive by DNA Probe Test means that the probe detected ribosomal RNA of Blastomyces dermatitidis from the isolate.
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative	**Storage Instructions:**
Causes for Rejection: Culture infested with mites.	**Sample Container:** Triple-contained.
Sample Test Kit:	**Availability:** Accuprobe test run once weekly.
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87149	**Fees:**

Blastomycosis (Serological – Complement Fixation)

Test Includes: CF test for antibodies to blastomycosis	
Reporting	
Results Available: 5-7 days	**Contact #s:** 512-458-7514
Reference	
Method: Complement Fixation	
Turnaround Time: 5-7 days	**Reference Range:** <1.8
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:**
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum, Spinal Fluid
Volume/Amount Required: 2 mL serum/CSF	**Preferred Specimen:** Single Serum; Paired Sera; Spinal Fluid
Collection/Preservation: red or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C.
Causes for Rejection: Hemolysis	**Sample Container:** red or tiger top vacutainer
Sample Test Kit:	**Availability:** Test performed 2 times per week
Diagnostic Information: Although titers of 1:8 and greater are considered positive, confirmed serological diagnosis of blastomycosis by the CF test requires a four-fold or greater increase in titer between acute and convalescent specimens, and lack of corresponding titers to Coccidiodes immitis and Histoplasma capsulatum. Specificity is demonstrated by immunodiffusion. CF titer parallels severity. Negative CF reaction does not exclude the existence of active B. dermatitidis infection, as less than 50% of sera from patients with proven blastomycosis are positive by this assay. Test performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86612	**Fees:**

Blastomycosis (Serological – Immunodiffusion)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 5-7 days	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: 2 mL serum/CSF	**Preferred Specimen:** Single Serum; Spinal Fluid
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: A precipitin band denotes recent or current infection, and is found in approximately 80% of proven cases of blastomycosis. CF titer parallels severity. Cross-reactions occur frequently with Coccidioidomycosis and Histoplasmosis. The test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.
Billing	
CPT Code: 86612	**Fees:**

Bordetella pertussis PCR

Test Includes: Real-Time PCR for Bordetella Pertussis	
Reporting	
Results Available: 1-2 days	**Contact #s:** 512-458-7735
Reference	
Method: Real Time PCR	
Turnaround Time: 2 days	**Reference Range:** Not detected
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: nasopharyngeal swab	**Sample Type:** Nasopharyngeal swab; nasopharyngeal wash
Volume/Amount Required: 1 swab or 5-10 mL nasopharyngeal wash	**Preferred Specimen:** Rayon or Dacron swabs with aluminum or plastic handles are acceptable.
Collection/Preservation: Submit swab in transport tube	**Storage Instructions:** After collection, the swab should be inserted back in to the dry transport tube. Store at 2-8° C until shipment at refrigerated temperature (2-8° C).
Causes for Rejection: Incorrect swab, obvious contamination with blood, received at ambient temperature	**Sample Container:** Swab or wash must be in sterile container without transport media
Sample Test Kit: Call (512) 458-7111 x 2936 for swabs.	**Availability:** Test performed 2-3 times per week
Diagnostic Information: Detection of DNA by real-time PCR. Absence of DNA does not necessarily indicate lack of infection and could be due to collection error.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Send on wet ice (double bagged) preferably, cold packs
Transport Temperature: 2-8° C (refrigerated)	**Shipping Requirements:** Must be shipped within 48 hours of collection; on cold packs or refrigerated (2-8° C) during transport. Must arrive at the Laboratory within 7 days.
Billing	
CPT Code: 87798	**Fees:**

Botulism Culture – (Isolation)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 7-14 days	**Reference Range:** No C. botulinum isolated.
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Foods>10 g or 5mL feces in sterile, leakproof container >5 mL Vomitus or Gastric Aspirate in sterile, leakproof container
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Telephone laboratory at 512-458-7185 before shipping specimens. Specimens and samples must be kept cold (2-8° C (refrigerated)) or frozen Molecular typing performed at TDSHS upon request.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: 2-8° C (refrigerated)	**Shipping Requirements:**
Billing	
CPT Code: 87076	**Fees:**

Botulism Culture (Toxic Detection)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 2-7 days	**Reference Range:** No. C.botulinum toxin detected.
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Foods; Feces 10 g in sterile leakproof container; Vomitus or Gastric Aspirate > 10 mL in sterile
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Telephone laboratory at 512-458-7185 before shipping specimens. Specimens and samples must be kept cold (2-8°C (refrigerated)) or frozen. Molecular typing performed at TDSHS upon request.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: 2-8° C (refrigerated) or frozen	**Shipping Requirements:**
Billing	
CPT Code: 87001	**Fees:**

Botulism Culture (Toxin Typing)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 2-7 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Foods 10g feces; Vomitus Gastric Aspirate in sterile leakproof container
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Telephone before shipping specimens. 10 g of stool is required for toxin typing. Specimens and samples must be kept cold [2-8° C (refrigerated)] or frozen. Molecular typing performed at TDSHS upon request.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: 2-8° C (refrigerated) or frozen	**Shipping Requirements:**
Billing	
CPT Code: 87158	**Fees:**

Botulism Serological (Toxin Detection)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 2-7 days	**Reference Range:** No C. botulinum toxin detected.
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Single Serum
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Specimens and samples must be kept cold [(2-8° C (refrigerated)] or frozen. Telephone before shipping specimens. Molecular typing performed at TDSHS upon request.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: 2-8° C (refrigerated) or frozen	**Shipping Requirements:**
Billing	
CPT Code: 87001	**Fees:**

Botulism (Serological – Toxin Typing)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 2-7 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Single Serum
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Telephone before shipping specimens. At least 10mL of serum is required for toxin typing. Molecular typing performed at TDSHS upon request.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: 2-8° C (refrigerated) or frozen	**Shipping Requirements:**
Billing	
CPT Code: 87158	**Fees:**

Brevitoxin (Culture – Toxin Detection)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 2-4 days	**Reference Range:** No toxin detected
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Shellfish
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Specimens accepted from Seafood Safety Division only with prior notification.	
Specimen **Submission**	
Required Request Form:	**Specimen Handling:**
Transport Temperature: 2-8° C (refrigerated)	**Shipping Requirements:**
Billing	
CPT Code:	**Fees:**

Brucellosis Culture – (Isolation)

Test Includes: Culture, PCR	
Reporting	
Results Available: 7-21 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals, PCR	
Turnaround Time: 7-21 days	**Reference Range:** No Brucella isolated
Limitations: Multiple specimens may be required to isolate Brucella.	**Interpretation:** Brucella isolated from any clinical specimen should be considered a significant finding.
Specimen Requirements	
Specimen Collection: Bone marrow biopsy, Venipuncture, preferably during fever episodes.	**Sample Type:** Blood, Bone Marrow
Volume/Amount Required: 10-20 mL whole blood, small amount of bone marrow.	**Preferred Specimen:** Blood, Bone Marrow
Collection/Preservation: Collect blood by venipuncture, specimen held at ambient temperature.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Insufficient specimen, wrong collection tube used.	**Sample Container:** Red or tiger top vacutainer
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: *Brucella* species is one of the organisms of the agents of Bioterrorism, but it also occurs sporadically. See Bioterrorism agents (Clinical -Isolation).	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Handle body fluids taking universal precautions.
Transport Temperature: 2-8° C	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87040	**Fees:**

Brucellosis Culture – Identification

Test Includes: Conventional Biochemicals	
Reporting	
Results Available: 7-14 days	**Contact #s:** (512)-458-7185
Reference	
Method: conventional biochemicals, PCR	
Turnaround Time: 7-14 days	**Reference Range:** Genus and species reported
Limitations: Organism must be viable for biochemical studies.	**Interpretation:** Brucella species is classified as a select agent and must be treated in accordance with regulations for select agents.
Specimen Requirements	
Specimen Collection: n/a	**Sample Type:** Pure culture
Volume/Amount Required: one specimen per patient	**Preferred Specimen:** Pure culture
Collection/Preservation: isolate on media	**Storage Instructions:** ambient temperature
Causes for Rejection: broken or compromised shipping container.	**Sample Container:** Agar slant in culture tube
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Brucella species is one of the organisms of the agents of Bioterrorism, but it also occurs sporadically. See Bioterrorism agents (Clinical -Isolation) Reference Range By report	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Extreme caution. Handle as infectious agent, Biosafety level 3.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.. Must be handled as a select agent once identified as a *Brucella* species.
Billing	
CPT Code: 87040	**Fees:**

Brucellosis (Serological – Agglutination)

Test Includes: Agglutination to detect antibodies to Brucellosis	
Reporting	
Results Available: 5-7 days	**Contact #s:** 512-458-7514
Reference	
Method: Agglutination test	
Turnaround Time: 5-7 days	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: venipuncture	**Sample Type:** serum
Volume/Amount Required: 2 mL serum	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: red or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, hemolysis	**Sample Container:** Red or tiger top tube
Sample Test Kit:	**Availability:** Test is performed 1-2 times per week
Diagnostic Information: A fourfold rise in serum (agglutination) antibody titer on paired sera or a single-serum agglutinin titer of 1:160 is suggestive of Brucellosis when accompanied by a compatible clinical course in a patient with a history of potential exposure. Brucellosis antibody appears during the second week in acute cases and peaks in 3-6 weeks. There is some cross-reaction with Francisella tularesis. The test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86622	**Fees:**

Calicivirus (Related Agents: Norwalk-like Virus, Norovirus)

Test Includes: Real-Time PCR for Calicivirus	
Reporting	
Results Available: 1-3 days	**Contact #s:** 512-458-7735
Reference	
Method: Real-Time PCR	
Turnaround Time: 1-3 days	**Reference Range:** Negative
Limitations: May not detect nucleic acid material in all cases	**Interpretation:** A negative result does not indicate that the patient is not infected. The laboratory test may not be able to detect very low levels of virus.
Specimen Requirements	
Specimen Collection: Feces	**Sample Type:** Feces
Volume/Amount Required: At least 200 µl	**Preferred Specimen:** Feces
Collection/Preservation: Collect fresh, no preservatives	**Storage Instructions:** store cold, 4° C, do not freeze
Causes for Rejection: Improper specimen, bloody stool	**Sample Container:** Stool specimen must be in sterile container without preservatives.
Sample Test Kit:	**Availability:** Test is performed 1-2 times per week
Diagnostic Information: Detection of viral RNA by real-time PCR. Absence of viral RNA does not necessarily indicate lack of infection. Testing performed on outbreak specimens.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Keep cold, 4° C, do not freeze
Transport Temperature: 2-8° C (refrigerated)	**Shipping Requirements:** Ship on wet ice
Billing	
CPT Code: 87798	**Fees:**

California Encephalitis (Serological)

Test Includes: Enzyme assay for IgM and IgG antibody to California Virus	
Reporting	
Results Available: 2-3 days	**Contact #s:** 512-458-7514
Reference	
Method: EIA	
Turnaround Time: 2-3 Days	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system. May be cross reactivity with other arthropod borne viruses.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed on request
Diagnostic Information: Generally seen in children less than five years of age in late summer.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.
Billing	
CPT Code: 86651	**Fees:**

Campylobacter Culture – (Isolation)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 4-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals	
Turnaround Time: 4-10 days	**Reference Range:** No Campylobacter species isolated
Limitations: Specimens should be collected before antibiotic therapy is initiated.	**Interpretation:** Absence of *Campylobacter* species indicates that no viable organisms were present in the specimen submitted.
Specimen Requirements	
Specimen Collection: Fresh stool in leakproof container.	**Sample Type:** Feces; Rectal swab.
Volume/Amount Required: > 10 mL for liquid stools; > 20 g solid or semi-solid stool.	**Preferred Specimen:** Feces; Rectal Swab in Cary-Blair transport media; <24 hrs
Collection/Preservation: collect fresh stool and store in container that will not leak between 2-8° C.	**Storage Instructions:** Keep stool between 2-8° C.
Causes for Rejection: Insufficient amount of sample; specimen> 24 hours old and not in transport media. Specimen received at temperatures> 8° C	**Sample Container:** Clean, dry leakproof container; Cary-Blair transport media tube.
Sample Test Kit:	**Availability:** Tested Monday – Friday
Diagnostic Information: See Bacterial Culture, Stool (Isolation)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Body fluids handled taking universal precautions.
Transport Temperature: 2-8° C	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87046	**Fees:**

Campylobacter (Culture – (Identification)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 4-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals	
Turnaround Time: 4-10 days	**Reference Range:** Genus and species reported
Limitations: Time between collection of sample and receipt in this laboratory; atmospheric conditions that the sample is kept at prior to shipping.	**Interpretation:** *Campylobacter* species is considered an enteric pathogen and usually significant when isolated.
Specimen Requirements	
Specimen Collection: See Aerobic Bacterial Culture (Isolation)	**Sample Type:** Pure culture.
Volume/Amount Required: One slant, one broth, one plate, or one deep	**Preferred Specimen:** Pure culture
Collection/Preservation: Collect sample in appropriate manner and keep in microaerophilic conditions.	**Storage Instructions:** Microaerophilic conditions.
Causes for Rejection: No identifying marks on the sample and/or paperwork.	**Sample Container:** Agar slant in tube or plating media in microaerophilic atmosphere.
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: See Aerobic Bacterial Culture (Isolation)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, enteric pathogen biosafety level 2.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87046	**Fees:**

Candidiasis (Culture – Isolation)

Test Includes: Isolation of fungus and morphological and/or biochemical testing for identification to species	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Germ tube; biochemical testing	
Turnaround Time: 21-28 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Sputum; Exudate; Scrapings; Tissue; Blood
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen, unless blood.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline. Blood specimens less than 5 mL are not acceptable. Refrigerated blood specimens will be rejected.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL of sterile saline to tissue if needed to maintain moisture during transport. If blood, prefer yellow-top with ACD; may also contain SPS. Green-top is acceptable with lithium or heparin.
Sample Test Kit:	**Availability:** Testing available upon approval by Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87106	**Fees:**

Candidiasis (Culture – Identification)

Test Includes: Morphological and/or biochemical identification to species level.	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-458-7586.
Reference	
Method: Morphological and/or biochemical testing.	
Turnaround Time: 7-10 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative.	**Storage Instructions:**
Causes for Rejection: Culture infested with mites.	**Sample Container:** Triple-contained.
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday - Friday
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87106	**Fees:**

Cat Scratch Fever (Serological – Micro IFA)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Turnaround Time: 5-7 days	**Reference Range:** <1:64
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8° C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test run every Tuesday and Thursday
Diagnostic Information: Bartonella henseleais considered the causative agent of Cat Scratch Disease. Sera must be collected at least 14 days apart. A fourfold rise in antibody titer between serum obtained early in the acute phase of illness and serum obtained during convalescent phase is convincing serological evidence of recent infection. Sera from 95% of patients with clinically defined cat scratch disease show IgG titers of 1:64 and above. Test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.
Billing	
CPT Code: 86611	**Fees:**

Chagas' Disease (Culture – Isolation)

Test Includes: Culture	
Reporting	
Results Available: 10 days	**Contact #s:**
Reference	
Method:	
Turnaround Time: 10 days	**Reference Range:** No parasites found
Limitations: Parasite must be viable to isolate	**Interpretation:**
Specimen Requirements	
Specimen Collection: Venipuncture, needle aspirate	**Sample Type:**
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Blood – Green Top; Lymph Node; Aspirate; Chagoma
Collection/Preservation: Collect blood by venipuncture; needle aspirate; specimen held at ambient temperature.	**Storage Instructions:** Ambient Temperature
Causes for Rejection: Inncorrect collection tube	**Sample Container:** Green top vacutainer
Sample Test Kit:	**Availability:** Test performed Monday - Friday
Diagnostic Information: Triatoma bugs are accepted for examination for trypanosomes. Blood	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Body fluids handled with universal precautions.
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87207	**Fees:**

Chagas' Disease (Identification)

Test Includes: Culture	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 458-7560
Reference	
Method: culture	
Turnaround Time: 24 hours	**Reference Range:** No parasites found
Limitations: organism must be viable	**Interpretation:**
Specimen Requirements	
Specimen Collection: venipuncture, needle aspirate	**Sample Type:** Blood – Green Top; Lymph Node; Aspirate; Chagoma
Volume/Amount Required: 10 mL whole blood, small amount of needle aspirate;	**Preferred Specimen:** Blood – Green Top; Lymph Node; Aspirate; Chagoma
Collection/Preservation: collect blood by venipuncture, specimen held at ambient temperature.	**Storage Instructions:** Hold at ambient temperature
Causes for Rejection: incorrect collection tube used	**Sample Container:** Green top vacutainer, sterile screw cap tube for aspirates or lymph node.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Triatoma bugs are accepted for examination for trypanosomes. Thin and thick blood smears stained with Giemsa stain will be examined.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Body fluids handled with universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87207	**Fees:**

Chagas' Disease (Serological – Forwarded by TDSHS to CDC for testing)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:**
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8° C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum specimens are forwarded to the CDC. A four-fold rise in titer between acute and convalescent specimens is considered evidence of recent infection.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8° C (refrigerated) or -20° C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.
Billing	
CPT Code: 86753	**Fees:**

Chancroid (Culture – Identification)

Test Includes: Conventional Biochemical Studies	
Reporting	
Results Available: 3-21 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemical studies	
Turnaround Time: 21 days	**Reference Range:** No bacteria isolated.
Limitations: Careful selection and disinfection of specimen collection sites is imperative in obtaining a suitable specimen for isolation of *Haemophilus* species.	**Interpretation:** Isolation of *H. ducreyi* is considered clinically significant.
Specimen Requirements	
Specimen Collection: scrapings from genital lesions	**Sample Type:** genital lesion, aspirates from buboes, urethral swabs
Volume/Amount Required: small amount of scrapings	**Preferred Specimen:** genital lesions
Collection/Preservation: Material should be collected from the exposed base or margin of the lesion. Needle aspirates of pus from buboes should not replace lesional smears and cultures. Recovery of nonchancroid isolates from the urogenital tract can be accomplished by collecting urethral swab with a flexible shaft mini-tipped swab.	**Storage Instructions:** 2-8° C
Causes for Rejection: Expired transport medium.	**Sample Container:** Sterile screw-cap tube or modified stuart's transport.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Prior notification requested. (512) 458-7582 – Clinical Bacteriology	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Body fluids handled with universal precautions.
Transport Temperature: 2-8° C	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87070	**Fees:**

Chlamydia (Genetic Probe)

Test Includes: Gen-Probe Pace 2C, Pace 2 CT	
Reporting	
Results Available: 2-3 days	**Contact #s:** (512) 458-7582
Reference	
Method: GenProbe Pce 2C, Pace 2 CT	
Turnaround Time: 2-3 days	**Reference Range:** Negative for *Chlamydia trachomatis*
Limitations: Results dependent on adequacy of sampling. Urine specimens can only be tested using amplified test. Culture is the ONLY recommended procedure for diagnosing chlamydial infection in cases of suspected child abuse.	**Interpretation:** Negative results indicate that the patient does not have detectable amounts of *C. trachomatis* rRNA.
Specimen Requirements	
Specimen Collection: Only swabs contained in the PACE specimen collection kit can be use to collect patient specimens.	**Sample Type:** (nonamplified Pace test) Female endocervical swab; Male endourethral swab; Conjunctival swab.
Volume/Amount Required: @ 500µL.	**Preferred Specimen:** (nonamplified) Female Endocervical Swab; Male urethral Swab; Conjunctival Swab
Collection/Preservation: Only swabs contained in the PACE specimen collection kit can be use to collect patient specimens. Urine can only be tested by amplified test method.	**Storage Instructions:** Store at ambient temperature.
Causes for Rejection: Wrong name on collection tube, Two swabs in tube, No swab on tube, Wooden swab in tube, Metal swab in tube, Insufficient amount of liquid to test, > 7 days from date of collection, > 80 uL of blood in specimen.	**Sample Container:** Gen-Probe transport tube**.**
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: Genetic probe is available only to those in STD and Family Planning Programs and to adolescent THSteps (EPSDT) patients for whom collectors are provided. Specimen requirements: Female endocervical, male urethral and conjuctival swabs using the appropriate Gen-Probe PACE Specimen Collection Kit. Only swabs contained in the PACE specimen collection kit can be use to collect patient specimens. Insert ONE collection swab only into the Gen-Probe transport tube. Avoid collecting grossly bloody specimens, which may interfere with performance of this test. Urine is an acceptable specimen for amplified test procedure only. **Culture is the ONLY recommended procedure for diagnosing chlamydial infection in cases of suspected child abuse	

Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** body fluid handled with universal precautions
Transport Temperature: Ambient temperature	**Shipping Requirements:** In accordance with federal shipping regulations for diagnostic specimens, noninfectious.
Billing	
CPT Code: 87490, 87491	**Fees:**

Cholera (Culture – Isolation)

Test Includes: Conventional biochemicals, serological typing for V. cholerae 01 and 0139.	
Reporting	
Results Available: 4-7 days.	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals, serological typing for V. cholerae 01 and 0139.	
Turnaround Time: 4-7 days	**Reference Range:** No Vibrio species isolated
Limitations: Specimen must be collected before antibiotic therapy has been initiated. Organisms must be viable for culture testing.	**Interpretation:** No *Vibrio* species isolated indicates that there were no viable *Vibrio* organisms in the specimen
Specimen Requirements	
Specimen Collection: Fresh stool or rectal swab.	**Sample Type:** Feces; Rectal swab.
Volume/Amount Required: > 10 mL for liquid stools; > 20 g solid or semi-solid stools.	**Preferred Specimen:** Feces < 24 hours old; Feces or rectal Swab in Cary-Blair medium.
Collection/Preservation: Collect fresh stool in clean, dry leak-proof container. Transfer indicated amount to the Cary-Blair transport as indicated by instructions on or with the transport tube.	**Storage Instructions:** Store between 2-8° C.
Causes for Rejection: Insufficient amount of stool to test, unpreserved stool > 24 hours; incorrect preservative for bacterial examination.	**Sample Container:** Clean, dry leakproof container or Cary-Blair transport tube.
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: Stool should be collected prior to antibiotic therapy. See Vibrio parahaemolyticus and other Vibrio species (Culture – Identification) Serological typing performed on all *V. cholerae* isolated for detection of O1 and O139 strains. See Cholera Culture – (Typing) Toxin testing forwarded to CDC. See Cholera Culture (Toxin Testing). Organisms identified as *Vibrio cholerae* will be serologically typed for serotype 01 and 0139.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Body fluids handled with universal precautions.
Transport Temperature: 2-8° C	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87046	**Fees:**

Cholera (Culture–Identification)

Test Includes: Conventional biochemicals and serology.	
Reporting	
Results Available: 7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals and serology	
Turnaround Time: 7 days	**Reference Range:** By report
Limitations: Vibrio species do not survive when exposed to refrigeration unless in clinical specimens. Isolates on agar slants or in transport media will not survive refrigeration.	**Interpretation:** Biochemical tests and serology confirm *Vibrio cholerae*. The isolation of a pathogenic *Vibrio* species from a clinical specimen should be considered a significant finding.
Specimen Requirements	
Specimen Collection: Pure culture 24 hours growth on appropriate media.	**Sample Type:** Pure culture.
Volume/Amount Required: One specimen per patient.	**Preferred Specimen:** Pure Culture on agar slant.
Collection/Preservation: Pure culture, 24 hour growth, held at ambient temperature after incubation.	**Storage Instructions:** Keep culture at ambient temperature. DO NOT refrigerate.
Causes for Rejection: No identifying marks on sample and/or paperwork. Viability lost due to refrigeration of isolate.	**Sample Container:** Dependent upon method of transport.
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: Stool should be collected prior to antibiotic therapy. See *Vibrio parahaemolyticus* and other Vibrio species (Culture – Identification).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agents, Biosafety level 2.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Cholera (Culture – Typing)

Test Includes: Serological typing of O1 and O139	
Reporting	
Results Available: 7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Serological typing of O1 and O139, otherwise sent to CDC for typing.	
Turnaround Time: 7 days	**Reference Range:** By report
Limitations: Serological typing does not establish the toxigenicity of the organism.	**Interpretation:** Agglutination of O1 or O139 indicates serotype of organism.
Specimen Requirements	
Specimen Collection: Dependent upon source of sample.	**Sample Type:** Pure culture
Volume/Amount Required: one specimen per patient.	**Preferred Specimen:** Pure culture.
Collection/Preservation: Collect in appropriate manner and keep at ambient temperature. DO NOT refrigerate.	**Storage Instructions:** DO NOT refrigerate – keep at ambient temperature.
Causes for Rejection: no identifying marks on sample and/or paperwork, broken transport tube.	**Sample Container:** Agar slant in transport tube, or agar plate in transport box.
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: Serological typing performed for detection of O1 and O139 strains. Additional typing requests forwarded by TDH to CDC with prior approval. Molecular typing performed at TDSHS upon request see Molecular typing (PFGE).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agents, biosafety level 2
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87147	**Fees:**

Cholera (Culture-Toxin Testing)

Test Includes: Test not performed at TDSHS. Submitted to the CDC for testing.	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: Determined by CDC report	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: one specimen per patient	**Preferred Specimen:** Pure culture
Collection/Preservation: Store at ambient temperature	**Storage Instructions:** ambient temperature
Causes for Rejection: Insufficient clinical information submitted.	**Sample Container:**
Sample Test Kit:	**Availability:** Cultures are shipped to the CDC Monday-Thursday. Special request supported by clinical information
Diagnostic Information: Forwarded by TDSHS to CDC for testing.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, Biosafety level 2.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code:	**Fees:**

Cholera (Serological – Vibriocidal Antibody)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Culture; Feces; Rectal Swab
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Immunization and cross-reactions with Brucella, Yersinia, and Citrobacter must be considered.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: 87158	**Fees:**

Chromoblastomycosis (Culture - Isolation)

Names of Related Agents: Fonsecaea species, Exophiala species, Cladophialophora species, etc.

Test Includes: Isolation of fungus and morphological and/or physiological testing for identification to species level.	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Slide culture	
Turnaround Time: 21-28 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required:	**Preferred Specimen:** Crust; Exudate; Tissue
Collection/Preservation: No preservative.	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen.
Causes for Rejection: Specimen frozen, in culture media, in transport media or preserved will be rejected.	**Sample Container:** Prefer sterile, leak-proof 50 mL conical tube. Add up to 10 mL sterile saline to crust or tissue to maintain moisture during transport.
Sample Test Kit:	**Availability:** Testing available upon approval from Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87101, 87102, 87103	**Fees:**

Chromoblastomycosis (Culture - Identification)

Names of Related Agents: Fonsecaea species, Exophiala species, Cladophialophora species, etc.

Test Includes: Morphological and/or physiological testing for identification to species level.	
Reporting	
Results Available: 14-21 days	**Contact #s:** 512-458-7586
Reference	
Method: Slide Culture	
Turnaround Time: 14-21days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure culture
Collection/Preservation: No preservative.	**Storage Instructions:**
Causes for Rejection: Culture infested with mites.	**Sample Container:** Triple-contained.
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday – Friday.
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87101, 87102, 87103	**Fees:**

Clonorchiasis (Microscopic – Direct Concentration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 1 day	**Reference Range:** No parasites found
Limitations: The specimen must be sent in a fresh (less than 5 hours old) or in formalin.	**Interpretation:** A report of no parasites found is indicative of no visible parasites in the specimen.
Specimen Requirements	
Specimen Collection: Fresh feces, flukes, tissue sections, or bile	**Sample Type:** Feces; Bile; Tissue Section; Fluke ID
Volume/Amount Required: > 10 g stool or > 10 mL liquid stool, small amount of tissue or bile.	**Preferred Specimen:** Feces; Bile; Tissue Section; Fluke ID
Collection/Preservation: the specimen must be sent in a fresh (less than 5 hours old) or in formalin. Adult fluke should be submitted in ethylalcohol.	**Storage Instructions:** ambient temperature
Causes for Rejection: Unpreserved stool> 5 hours old;	**Sample Container:** Clean, dry leak-proof container.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: For detection of eggs in fecal specimens, the specimen must be sent in a fresh (less than 5 hours old) or in formalin. Adult fluke should be submitted in ethylalcohol. Referred material accepted from hospital, private and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Body fluids handled with universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87015	**Fees:**

Clostridium difficile Culture (Identification)

Test Includes: Rapid ANA II, API anaID; GLC, conventional biochemicals	
Reporting	
Results Available: 7-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: Rapid ANA II, API ana ID GLC Conventional biochemicals.	
Turnaround Time: 7-10 days	**Reference Range:** By report
Limitations: Routine toxin testing for C. difficile is not performed at this laboratory. Transport method must be suitable for anaerobic conditions or organisms may not be viable for testing.	**Interpretation:** Toxigenic culture tests C. difficile isolates for toxin production and has higher sensitivity and equivalent specificity compared to the cytotoxicity assay.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture under anaerobic conditions.
Volume/Amount Required: One culture per patient.	**Preferred Specimen:** Pure culture under anaerobic conditions.
Collection/Preservation: Must be maintained under anaerobic conditions.	**Storage Instructions:** Store under anaerobic conditions, ambient temperature.
Causes for Rejection: Shipped under aerobic conditions; no identifying marks on sample and/or paperwork.	**Sample Container:** Anaerobic containers required.
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: See Anaerobic Bacterial Culture (Identification).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle as infectious agent.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87076	**Fees:**

Clostridium perfringens (Culture - Isolation)

Test Includes: Rapid ANA II, API anaID; GLC, conventional biochemicals.	
Reporting	
Results Available: 7-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: Rapid ANA II, API ana ID GLC Conventional biochemicals.	
Turnaround Time: 7-10 days	**Reference Range:** No Clostridium perfringens isolated
Limitations: Food samples are tested for outbreaks investigated by the IDEAS department of TDSHS only. All samples must be collected by a sanitarian or appointee.	**Interpretation:** Isolation of C. perfringens from a food source is indicative of food poisoning.
Specimen Requirements	
Specimen Collection: Food	**Sample Type:** Food
Volume/Amount Required: 25 grams of each type of food for each pathogen tested.	**Preferred Specimen:** Food
Collection/Preservation: Food must be collected by a sanitarian and transported at 2-8° C.	**Storage Instructions:** 2-8° C.
Causes for Rejection: insufficient amount, improperly collected or stored.	**Sample Container:** Clean, dry, leak-proof containers
Sample Test Kit:	**Availability:** Monday-Friday. Outbreak testing available on Saturday with prior arrangements.
Diagnostic Information: See instructions Food Poisoning (Culture - Isolation). Testing performed for Epidemiological investigations approved by the IDEAS department, only.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Food samples according to FDA protocols for collection and transport. Chain of custody must be used if possibility of legal issues exists.
Transport Temperature: 2-8° C	**Shipping Requirements:** Leak-proof containers, overnight delivery.
Billing	
CPT Code: 87075	**Fees:**

Clostridium perfringens (Culture Identification)

Test Includes: Rapid ANA II, GLC, conventional biochemicals	
Reporting	
Results Available: 7-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: Rapid ANA II, GLC, conventional biochemicals.	
Turnaround Time: 7-10 days	**Reference Range:** By report
Limitations: Transport method must be suitable for anaerobic conditions or organisms may not be viable for testing.	**Interpretation:** Growth and results of biochemical tests indicate type of organism.
Specimen Requirements	
Specimen Collection: Pure culture	**Sample Type:** Pure culture under anaerobic conditions.
Volume/Amount Required: one specimen per patient.	**Preferred Specimen:** Pure culture under anaerobic conditions.
Collection/Preservation: Must be collected under anaerobic conditions.	**Storage Instructions:** Store under anaerobic conditions at ambient temperature.
Causes for Rejection: Shipped under aerobic conditions; Broken in transport.	**Sample Container:** Anaerobic transport medium.
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: See Anaerobic Bacterial Culture (Identification).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agents, anaerobic conditions
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87076	**Fees:**

Clostridium perfringens Culture (Toxin Detection)

Test Includes: Toxin detection	
Reporting	
Results Available: 2 days	**Contact #s:** (512) 458-7562
Reference	
Method:	
Turnaround Time: 2 days	**Reference Range:** No toxin detected
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Food
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: See Food Poisoning Culture (Toxin Detection)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: 2-8° C	**Shipping Requirements:**
Billing	
CPT Code:	**Fees:**

Clostridium perfringens Culture – (Typing)

Test Includes: Test is not performed at TDSHS. Test is performed at the CDC.	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: Dependent on CDC report	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: n/a	**Sample Type:** Pure culture under anaerobic conditions.
Volume/Amount Required: one specimen per patient.	**Preferred Specimen:** Pure Culture under anaerobic conditions.
Collection/Preservation: Pure culture maintained under anaerobic conditions.	**Storage Instructions:** Ambient temperature, anaerobic condition
Causes for Rejection: Culture received under aerobic conditions, incomplete information on submission form, prior approval not secured before shipment.	**Sample Container:** anaerobic transport container.
Sample Test Kit:	**Availability:** Monday-Thursday, unless prior arrangements have been made for Friday ship out.
Diagnostic Information: Isolates are sent to the CDC for typing with prior approval. See instructions Food (Culture –(Identification).	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Infectious agent
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87147	**Fees:**

Coccidioidomycosis (Culture – Isolation)

Test Includes: Isolation of fungus and identification by Gen-Probe Accuprobe test	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Accuprobe culture confirmation test; hybridization of ribosomal RNA to probe detected by chemiluminesence	
Turnaround Time: 21-28 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:** Positive by DNA Probe Test means that the probe detected ribosomal RNA of Coccidioides immitis from the isolate.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Sputum; Exudate; Tissue
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL of sterile saline to tissue if needed to maintain moisture during transport.
Sample Test Kit:	**Availability:** Testing available upon approval by Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87101, 87102, 87103	**Fees:**

Coccidioidomycosis (Culture – Genetic Probe - Culture Confirmation)

Test Includes: Identification by Gen-Probe Accuprobe Test	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-458-7586
Reference	
Method: Accuprobe culture confirmation test; hybridization of ribosomal RNA to probe detected by chemiluminesence	
Turnaround Time: 7-10 days	**Reference Range:** By Report
Limitations: Positive DNA Probe Test does not mean the isolate is still viable.	**Interpretation:** Positive by DNA Probe Test means that the probe detected ribosomal RNA of Coccidioides immitis from the isolate.
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative.	**Storage Instructions:**
Causes for Rejection: Culture infested with mites.	**Sample Container:** Triple-contained
Sample Test Kit:	**Availability:** Accuprobe test is run once weekly.
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87101, 87102, 87103	**Fees:**

Coccidioidomycosis (Serological – Complement Fixation)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 5-7 days	**Reference Range:** <1:1
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: 2 mL serum/CSF	**Preferred Specimen:** Single Serum; Spinal Fluid
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: CF titer parallels severity. A titer of 1:32 indicates disseminating disease. Cerebrospinal fluid titers, when present may indicate coccimeningitis (75% positive). A Nonreactive CF reaction does not exclude a diagnosis of Coccidioidomycosis. Test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.
Billing	
CPT Code: 86635	**Fees:**

Coccidioidomycosis (Serological – Immunodiffusion)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method: Immumodiffusion	
Turnaround Time: 5-7 days	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 2 mL serum	**Preferred Specimen:** Single Serum; Spinal Fluid
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8° C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Testing performed on Tuesday
Diagnostic Information: The immunodiffusion correlates both in sensitivity and clinical utility with the CF test. It is most useful in confirming the specificity of low CF titers, where line(s) of identity are formed with reference antisera. A precipitin band denotes recent or current infection. Test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.
Billing	
CPT Code: 86635	**Fees:**

Coliform – Fecal (Culture – Quantitation)

Test Includes: Membrane filtration or Multitube fermentation	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7562
Reference	
Method: membrane filtration or Multitube fermentation method	
Turnaround Time: 3 days	**Reference Range:** Less than 2.2 MPN/ 100 mL
Limitations:	**Interpretation:** Values of fecal coliform less than 2.2 MPN/100mL is considered a negative test. Values are dependent on age of sample and transport temperature.
Specimen Requirements	
Specimen Collection: Bottled water	**Sample Type:** Water
Volume/Amount Required: 100 mL	**Preferred Specimen:** Water
Collection/Preservation: Sealed bottles of water, ambient temperature	**Storage Instructions:** ambient temperature
Causes for Rejection: Sample too old	**Sample Container:** Water bottle collectors
Sample Test Kit:	**Availability:** Monday-Sunday
Diagnostic Information: Test is available only to health officials with 1-day notice. Sample must be iced and less than 6 hours old.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Specimen collected according to EPA protocol for water testing.
Transport Temperature: 2-8° C	**Shipping Requirements:** On ice within 6 hours of collection.
Billing	
CPT Code: 87046	**Fees:**

Coliform – Total Colilert

Test Includes: Colilert 18 hour	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 458-7611
Reference	
Method: Mug fluoresecent detection	
Turnaround Time: 1 day	**Reference Range:** Absence of coliform
Limitations: Test results are dependent on fluorescent display. Other substances that fluoresce can give false positive test results.	**Interpretation:** Report is indicative of no detectable levels of fecal coliforms. Test results do not indicate bacterial load of other types of organisms.
Specimen Requirements	
Specimen Collection: water	**Sample Type:** water
Volume/Amount Required: 100 mL	**Preferred Specimen:** water
Collection/Preservation: Collect 100 mL following instructions provided in collection kit. Store at ambient temperature. Transport to laboratory within 30 hours of collection.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Sample > 30 hours, incorrect collection bottle.	**Sample Container:** 100 mL sterile bottle with sodium thiosulfate.
Sample Test Kit: Idexx Colilert 18 hour	**Availability:** Monday-Sunday
Diagnostic Information: Sample must be in container provided by TDSHS. Water must be from a closed system and less than 30 hours old. Fee for service is charged.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Specimens must be collected and handled following instructions included in the package.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Within 30 hours of collection.
Billing	
CPT Code: 87046	**Fees:**

Colorado Tick Fever (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Turnaround Time: 3 weeks	**Reference Range:** <1.00 (Nonreacative)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum specimens are forwarded to the CDC. Serum specimens are to be collected at least 14 days apart. A significant titer increase is evidence of current or recent infection. Since IgM antibodies appear 14-16 days after onset, PCR test, with prior arrangement with CDC, can be performed on blood specimens collected within 8 days after onset.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8° C (refrigerated) or -20° C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.
Billing	
CPT Code: 86790	**Fees:**

Coronavirus (Serological – Forwarded by TDSHS to CDC for testing)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Isolate and serum specimens are sent to the CDC with prior approval only. EM studies done with prior approval only. Specimens must be iced but not frozen.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8° C (refrigerated) or -20° C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.
Billing	
CPT Code: 86790	**Fees:**

Cryptococcosis (Culture - Isolation)

Test Includes: Isolation of fungus and morphological and biochemical tests for identification to species level.	
Reporting	
Results Available: 14-21 days	**Contact #s:** Contact #s: 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Biochemical testing for identification	
Turnaround Time: 14-21 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Sputum; Tissue; Spinal Fluid; Blood
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. Cryptococcus species do not survive refrigeration well.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline. Blood specimens less than 5 mL are not acceptable. Refrigerated blood specimens will be rejected.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL sterile saline to tissue if needed to maintain moisture during transport. If blood, prefer yellow-top with ACD; may also contain SPS. Green-top is acceptable with lithium or heparin.
Sample Test Kit:	**Availability:** Testing available upon approval by Dr. Penfield
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen **Submission**	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87106	**Fees:**

Cryptococcosis (Culture - Identification)

Test Includes: Morphological and biochemical testing for identification to species level.	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-458-7586
Reference	
Method: Biochemical testing for identification	
Turnaround Time: 7-10 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative	**Storage Instructions:**
Causes for Rejection: Culture infested with mites.	**Sample Container:** Triple-contained
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday-Friday
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87106	**Fees:**

Cryptococcosis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** <1:16 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Single Serum; Spinal Fluid
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notice is requested (458-7760). Specimen must be sent with a complete medical history. Cryptococcal antibody, primarily directed against a galactomannan capsular antigen, is often detectable in the early (pulmonary) phase prior to antigenemia.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86641	**Fees:**

Cryptosporidiosis (Microscopic – Direct Concentration Acid Fast Stain)

Test Includes: Acid Fast Stain	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Acid Fast Stain	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:** No parasites found indicates that there were no visible parasites consistent with Cryptosporidia. A negative test does not rule out the possibility of other parasitic infections.
Specimen Requirements	
Specimen Collection: Feces	**Sample Type:** Fresh Feces
Volume/Amount Required: 15 mL stool, liquid stool, 15 gms	**Preferred Specimen:** Feces fresh (less than five hours) or formalin
Collection/Preservation: Fecal specimens must be sent in formalin.	**Storage Instructions:** ambient temperature
Causes for Rejection: Unpreserved stool > 5 hours old.	**Sample Container:** Formalin Transport for parasites.
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Fecal specimens must be sent in formalin. Specimens are accepted from public health officials. Referred material accepted from hospital, private, and reference labs.	
Specimen **Submission**	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions. Formalin is a poison, handle with care.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87015	**Fees:**

Cyclospora sp. (Microscopic – Direct Concentration Heat Infused Acid Fast)

Test Includes: Acid fast stain	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Acid fast stain	
Turnaround Time: 3 days	**Reference Range:** No parasites found.
Limitations: Fecal specimens must be sent in formalin.	**Interpretation:** No parasites found indicates that there were no visible parasites consistent with Cyclospora. A negative test does not rule out the possibility of other parasitic infections.
Specimen Requirements	
Specimen Collection: Feces	**Sample Type:** Feces in formalin
Volume/Amount Required: 15 mL liquid stool or 15 gram stool	**Preferred Specimen:** Feces in formalin
Collection/Preservation: Fecal specimens are collected and placed in formalin preservative.	**Storage Instructions:** ambient temperature
Causes for Rejection: feces > 5 hours old not in formalin.	**Sample Container:** Vial with formalin
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: *Fecal specimens must be sent in formalin*. Specimens are accepted from public health officials. Referred material accepted from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions. Formalin is a poison, handle with care.
Transport Temperature: Ambient temperature.	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87015	**Fees:**

Cysticercosis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:**
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Single Serum; Spinal Fluid
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8° C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum specimens are forwarded to the CDC. A Nonreactive serological result does not rule out the disease. Rare cross-reactions occur.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.
Billing	
CPT Code: 86682	**Fees:**

Cysticercosis (Taenia Solium) (Microscopic – Direct Stained Slides)

Test Includes: Microscopic examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 1 day	**Reference Range:** Specimen submitted was not a worm.
Limitations:	**Interpretation:** By report
Specimen Requirements	
Specimen Collection: adult worms, tissue	**Sample Type:** Tissue; Worm (in alcohol, not formalin); Cross Sections
Volume/Amount Required: small amount of tissue; intact worm	**Preferred Specimen:** Tissue; Worm (in alcohol, not formalin); Cross Sections
Collection/Preservation: Collect worm and place in alcohol.	**Storage Instructions:** ambient temperature
Causes for Rejection: n/a	**Sample Container:** clean, leak-proof container
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Adult worms – Identification of scolex or clearing and examination of proglottids for uterine lateral branches.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** n/a
Transport Temperature: Ambient temperature	**Shipping Requirements:** Ambient temperature
Billing	
CPT Code: 87177	**Fees:**

Cytomegalovirus (Culture - Isolation)

Test Includes: Cell Culture	
Reporting	
Results Available: 2-21 days	**Contact #s:** 512-458-7594
Reference	
Method: Cell Culture	
Turnaround Time: 2-21 days	**Reference Range:** No virus isolated
Limitations:	**Interpretation:** A result of "No virus isolated" does not necessarily mean absence of a viral agent. The success of virus isolation depends a great deal on the submission of the proper specimen, collected at the right time, adequately maintained, and shipped with the least possible delay.
Specimen Requirements	
Specimen Collection: Specimens should be collected at an appropriate anatomic site and at the proper time after infection because infectious agents are generally shed for only a short period of time. Refer to Specimen Collection by Type table for additional instructions.	**Sample Type:** See preferred specimen
Volume/Amount Required: 10-20 mL of urine, tissue sample in enough viral transport media to prevent drying, swabs in 2-4 mL of viral transport media.	**Preferred Specimen:** Urine; Tissue; Saliva
Collection/Preservation:	**Storage:** Maintain specimens at 2-8°C immediately after collection. Ship specimens with the least possible delay. If freezing specimens for CMV isolation, use a cryoprotective agent such as 2SP.
Causes for Rejection: Specimens submitted on a preservative such as formalin.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Isolation is done in conventional tube culture and shell vial cultures. Shell vial cultures are incubated for 2 days and then an immunofluorescence test using CMV-specific monoclonal antibody is performed. Tube cultures are held for 21days. If characteristic CPE is observed in the tube culture, an imunofluorescence test is performed using CMV-specific monoclonal antibody.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: 2-8° C, overnight delivery	**Shipping Reqs:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 86645	**Fees:**

Cytomegalovirus (Culture - Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 2-21 days	**Contact #s:** 512-458-7594
Reference	
Method: Immunofluorescence	
Turnaround Time: 2-21 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: Fill monolayer tube with media if transporting at ambient temperature. If transporting on dry ice, send 1-2 mL.	**Preferred Specimen:** Cell culture isolate with CPE.
Collection/Preservation:	**Storage Instructions:** If shipment of cell culture isolate will be delayed, store at -70° C.
Causes for Rejection:	**Sample Container:** Cell culture tube or sterile cryovial.
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Identification based on immunofluorescence test using CMV-specific monoclonal antibody.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Cell culture tube with CPE: ambient temperature. Frozen isolate: on dry ice.	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 86644	**Fees:**

Cytomegalovirus (Serological – Enzyme Immunoassay– IgM and IgG)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 5-7 days	**Reference Range:** < 1.00
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:**
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 2 mL serum	**Preferred Specimen:** Paired Sera; Single Serum (Transplant Patients only
Collection/Preservation: Samples that will be delivered to the laboratory within 8 hours of collection may be transported at room temperature in the original blood collection tube. If the samples are going to be shipped and will be delivered to the laboratory within 48 hours of collection, sera must be separated from the blood and shipped on cold packs, between 2° and 8° C. If the serum samples will not be delivered to the laboratory within 48 hours of collection at these temperatures, then the samples must be frozen at -20° C or lower and shipped on dry ice.	**Storage Instructions:** Separated serum may be held at 2-8° C, or frozen at -20° C.
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, specimens received with extended transit time, or received at incorrect temperature.	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: A positive EIA IgG index demonstrates prior infection with cytomegalovirus. Evidence of active or recent infection requires detectable IgM antibody and/or a 10% or greater increase in positive EIA IgG index values between acute and convalescent specimens. Sera must be collected 14 days apart. Significant rise in antibody level indicates recent infection or vaccination. In suspected congenital cases, sera from mother and infant must be submitted together. Test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions

Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.
Billing	
CPT Code: 86644	**Fees:**

Cytomegalovirus (Microscopic – Electron Microscopy)

Test Includes: Electron microscopy	
Reporting	
Results Available: 1-2 days	**Contact #s:** 512-458-7594
Reference	
Method: Electron microscopy	
Turnaround Time: 1-2 days	**Reference Range:** Herpesvirus not detected
Limitations: Detection of herpesvirus particles by electron microscopy does not differentiate between CMV, VZ, Herpes simplex 1 and 2, and other members of the Herpesviridae family.	**Interpretation:**
Specimen Requirements	
Specimen Collection: Specimens should be collected at the proper time after infection because viruses are generally shed for only a short period of time.	**Sample Type:** See preferred specimen.
Volume/Amount Required: 10-20 mL urine	**Preferred Specimen:** Urine
Collection/Preservation:	**Storage Instructions:** Maintain specimens at 2-8° C immediately after collection.
Causes for Rejection: Specimens submitted on a preservative such as formalin.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Result is based on presence or absence of herpesvirus particles.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: 2-8° C , overnight	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 88348	**Fees:**

Dengue Fever (Serological – Enzyme Immunoassay (IgM capture and IgG)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Turnaround Time: 5-7 days	**Reference Range:** <1.00
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:**
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Diagnostic Information: These assays detect IgM and IgG antibodies against all four Dengue fever types. Except for very early IgM responses, the immune response to Dengue fever is not type specific. While a single serum may be tested, a second serum collected 10-14 days later may be required for best evidence for current infection. Paired sera are especially important when the acute phase sample is taken within the six days following onset of symptoms. In most patients, Dengue antibodies are detectable after the sixth day. Cross-reactions occur with Yellow Fever immunization and other arboviruses are known to occur, but the extent and degree of cross-reaction varies. This test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 87252, 87253	**Fees:**

Dermatomycosis (Culture - Isolation)

Names of Related Agents: Trichophyton species, Microsporum species, etc.

Test Includes: Isolation of fungus and morphological and physiological tests for identification to species level.	
Reporting	
Results Available: 14-21 days	**Contact #s:** 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Morphological and physiological testing for identification	
Turnaround Time: 14-21 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required:	**Preferred Specimen:** Tissue; Scrapings; Nail; Hair
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. Dermatophytes are sensitive to lower temperatures so skin scrapings, nail, or hair clippings should be held and shipped at room temperature.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical. Skin scrapings, nail, or hair clipping should be kept and shipped dry.
Sample Test Kit:	**Availability:** Testing available upon approval of Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87101	**Fees:**

Dermatomycosis (Culture - Identification)

Names of Related Agents: Trichophyton species, Microsporum species, etc.

Test Includes: Morphological and physiological tests for identification to species level.	
Reporting	
Results Available: 14-21 days	**Contact #s:** 512-458-7586
Reference	
Method: Morphological and physiological testing for identification	
Turnaround Time: 14-21 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative	**Storage Instructions:**
Causes for Rejection: Culture infested with mites.	**Sample Container:** Triple-contained.
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday-Friday
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87101	**Fees:**

Dientamoeba fragilis (Microscopic – Trichrome Stains)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination, Trichrome stain	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: Collect fresh feces and immediately place in PVA preservative.	**Sample Type:** Feces fresh (less than five hours) or in PVA
Volume/Amount Required: 15 mL liquid stool or 15 g stool	**Preferred Specimen:** Feces fresh (less than five hours) or in PVA
Collection/Preservation: Collect fresh feces and immediately place in PVA preservative. Fresh stools not in PVA must be examined within 5 hours.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Unpreserved stools > 5 hours old	**Sample Container:** PVA transport for Parasites
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Fecal specimens must be sent in PVA. Referred material accepted from hospital, private, and reference labs	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions. PVA is a poison, handle with care.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained, In accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87209	**Fees:**

Diptheria Culture –(Isolation)

Test Includes: Conventional biochemicals, toxigencity testing	
Reporting	
Results Available: 3-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals	
Turnaround Time: 3-7 days	**Reference Range:** No C. diphtheriae isolated.
Limitations: Specimen should be taken prior to antimicrobial therapy. Organisms must be viable for culture studies.	**Interpretation:** No *C. diphtheriae* isolated indicates that no viable organism was present in the specimen submitted. If clinical symptoms are indicative of diphtheria infection, a specimen should be submitted to the CDC for PCR studies.
Specimen Requirements	
Specimen Collection: Throat swab	**Sample Type:** Throat swab
Volume/Amount Required: One throat swab per patient.	**Preferred Specimen:** Throat Swab submitted on Loeffler's slant or in Amies or Stuart's transport media.
Collection/Preservation: Collect by throat swab using a cotton-tipped or polyester-tipped swab. Swabs taken below the membrane are most valuable. A portion of the membrane may be submitted for culture, but these do not always yield *C. diphtheriae*.	**Storage Instructions:** Stored between 2-25°C.
Causes for Rejection: Incorrect source of specimen. Specimen > 24 hours not in transport medium.	**Sample Container:** Swab transport system.
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: Swabs should be submitted on Loeffler's Slant or in Amies or Stuart transport medium. Prior notification of the Clinical Bacteriology Section at 512-458-7582	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: 2-25° C	**Shipping Requirements:** Triple contained, In accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87070	**Fees:**

Diptheria Culture –(Identification)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 5-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals	
Turnaround Time: 5-10 days	**Reference Range:** By report
Limitations: Organism must be viable.	**Interpretation:** Identification of *C. diphtheriae* must be considered significant. Toxin studies must be performed to demonstrate that the strain is toxigenic.
Specimen Requirements	
Specimen Collection: Collect by throat swab using a cotton-tipped or polyester-tipped swab. Swabs taken below the membrane are most valuable. A portion of the membrane may be submitted for culture, but these do not always yield *C. diphtheriae*.	**Sample Type:** Pure culture.
Volume/Amount Required: One culture per patient.	**Preferred Specimen:** Pure Culture on agar slant.
Collection/Preservation: Agar slant, preferably Loeffler's media, ambient temperature.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Broken or compromised container.	**Sample Container:** Agar slant in screw cap tube.
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: See Aerobic Bacterial Culture (Isolation).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, biosafety level 2.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained, In accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87070	**Fees:**

Diptheria Culture – (Toxigenicity)

Test Includes: *Diphtheria* toxin testing by precipitate test.	
Reporting	
Results Available: 2-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Precipitate test	
Turnaround Time: 2-7 days	**Reference Range:** No toxin demonstrated
Limitations: Organism must be viable and grown on media such as Loeffler's that supports production of toxin.	**Interpretation:** No toxin demonstrated is indicative of a non toxigenic strain of *C. diphtheriae* or a weakly toxigenic strain. Additional testing may be necessary dependent on the clinical history and symptoms of the patient.
Specimen Requirements	
Specimen Collection: Throat swab	**Sample Type:** Pure culture, Throat swab
Volume/Amount Required: One specimen per patient.	**Preferred Specimen:** Pure Culture safely contained; Throat Swab submitted on Loeffler's slant or in Amies or Stuart's transport.
Collection/Preservation: Swab throat and keep in original container for transport.	**Storage Instructions:** May be stored between 2-25° C.
Causes for Rejection: No identifying marks on sample and/or paperwork, broken container.	**Sample Container:** Transport tube.
Sample Test Kit:	**Availability:** Tested Monday – Friday
Diagnostic Information: Pure culture submitted on Loeffler's Slant allows for rapid testing.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle as infectious agent.
Transport Temperature: 2-25° C	**Shipping Requirements:** Triple contained, In accordance with federal shipping regulations for infectious agent.
Billing	
CPT Code: 87070	**Fees:**

Diphyllobothriasis (Microscopic – Direct Concentration)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic – Direct Examination	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations: Fecal Specimens must be sent in Formalin	**Interpretation:** No parasites found indicates that there were no visibly detectable parasites in the specimen.
Specimen Requirements	
Specimen Collection: Fresh feces	**Sample Type:** Feces; Proglottid Scolex
Volume/Amount Required: 15 mL liquid stool, 15 g stool	**Preferred Specimen:** Feces; Proglottid Scolex
Collection/Preservation: Fecal specimens must be sent in formalin.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Unpreserved stool > 5 hours old .	**Sample Container:** Formalin transport for parasites.
Sample Test Kit:	**Availability: Monday - Friday**
Diagnostic Information: Fecal specimens must be sent in formalin. Proglottids must be sent in ethyl alcohol or formalin. Referred material accepted from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions. Formalin is a poison, handle with care.
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:** Triple contained, In accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87015	**Fees:**

Eastern Equine Encephalitis (Serological – Forwarded by TDSHS to CDC for testing)

Related Agents : Arbovirus, EEE

Reporting	
Results Available:	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time:	**Reference Range:** <1.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system. May be cross reactivity with other arthropod borne viruses.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Testing performed daily
Diagnostic Information: The presence of IgM indicates recent infection. A fourfold titer increase on paired sera is required for best evidence of current infection. Cross-reactions occur with other group A arboviruses, i.e. Western Equine Encephalitis. Human infections are seasonal, from mid- to late summer, occurring from New England to Texas. The test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86652	**Fees:**

Echinococcosis (Serological – Forwarded by TDSHS to CDC for testing)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** <1:8
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:**
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum specimens are forwarded to the CDC. Increasing antibody values between acute and convalescent specimens is considered evidence of recent or current infection. Liver cysts yield titers of 1:256 or higher; cysts at other sites stimulate antibody production less. Titers persist for years even after surgical removal of cysts. Cross-reactions to cysticercosis do occur.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86682	**Fees:**

Echinococcosis (Microscopic - Direct)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 24 hours	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Hydatid Cyst Aspirate
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Microscopic examination of hydatid cyst fluid may reveal the hydatid sand or, under certain circumstances, just the hooklets.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code: 87177	**Fees:**

Ehrlichiosis (Serological - Immunofluorscence)

Reporting	
Results Available:	**Contact #s:**
Reference	
Turnaround Time: 3-5 days	**Reference Range:** <1:64 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 2 mL serum	**Preferred Specimen:** Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed every Tuesday and Thursday
Diagnostic Information: Human ehrlichiosis is a tick-borne disease caused by rickettsial-like agents. Sera are tested for presence of antibodies to Ehrlichia chaffeencis. Single IgG IFA titers of 1:64 or greater indicate exposure. Ideally, acute and convalescent-phase serum specimens, drawn at least 4 weeks apart, should be submitted. Specimens demonstrating a four-fold rise in IgG titers between acute and convalescent samples suggest recent or current infection. Test is performed twice per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86666	**Fees:**

Enteric Bacteria (See Aerobic Bacterial Culture, Stool (Isolation))

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:**
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: For Salmonella, see SalmonellosisCulture–(Identification) For Shigella, See Shigellosis Culture (Identification) For Escherichia coli, Escherichia coli 0157:H7 Culture (Identification) Escherichia coli 0157:H7 or other Shiga toxin E. coli (Toxin Testing). For Vibrio species Vibrio cholerae, (Culture – Identification). For Yersinia, see Yersinia enterocolitica (Culture – Identification)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Codes: 87081 (screening), 87040, 87045, 87046, 87070, 87071, 87073 87077, 87143, 87147, 87181, 87205, 87206, 87210, 87278, 87430, 87449	**Fees:**

Enterobiasis – Pin Worm (Microscopic - Direct)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 24 hours	**Reference Range:** No pinworm eggs found.
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: taped slide, worms	**Sample Type:** perianal; worms
Volume/Amount Required: 1 tape slide	**Preferred Specimen:** Taped Slide of perianal region; worms, pinworm prep kits
Collection/Preservation: using strip of clear cellulose tape sticky side outward on a microscope slide, press firmly against the perianal folds. The tape is then spread back over the slide adhesive side down. Ship in slide carrier.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Frosted tape used.	**Sample Container:** Slide carrier
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Use only clear, cellophane tape or manufactured paddles. Adult worms should be submitted in EtOH or formalin.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Fecal specimen handled using universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Slide carrier
Billing	
CPT Code: 87172	**Fees:**

Enterovirus (Culture - Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-458-7594
Reference	
Method: Cell culture	
Turnaround Time: 2 -14 days	**Reference Range:** No virus isolated
Limitations:	**Interpretation:** A result of "No virus isolated" does not necessarily mean absence of a viral agent. The success of virus isolation depends a great deal on the submission of the proper specimen, collected at the right time, adequately maintained, and shipped with the least possible delay.
Specimen Requirements	
Specimen Collection: Specimens should be collected at an appropriate anatomic site and at the proper time after infection because viruses are generally shed for only a short period of time. Refer to Specimen Collection by Type table for additional instructions.	**Sample Type:** See preferred specimen
Volume/Amount Required: 2-5 mL of CSF, 2-4g of stool, swabs in 2-4 mL of viral transport media, or tissue in enough viral transport media to prevent drying.	**Preferred Specimen:** CSF; Stool; NP Swab; Vesicular Fluid; Conjunctival Fluid; Tissue
Collection/Preservation: Viral transport media.	**Storage Instructions:** Arriving < 3-4 days after collection, store and send at 2-8° C. Arriving > 3-4 days after collection, store and send at -70° C.
Causes for Rejection: Specimens submitted on a preservative such as formalin.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: A variety of cell monlayers are inoculated which support the growth of enteroviruses. If characteristic CPE is observed, confirmation of identification will be performed.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Arriving < 3-4 days: 2-8° C Arriving >3-4 days: send on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252	**Fees:**

Enterovirus (Culture – Typing)

Test Includes: Immunofluorescence, serum neutralization	
Reporting	
Results Available: 1-4 weeks	**Contact #s:** 512-458-7594
Reference	
Method: Immunofluorescence, serum neutralization	
Turnaround Time: 1-4 weeks	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: Fill monolayer tube with media if transporting at ambient temperature. If transporting on dry ice, send 1-2 mL.	**Preferred Specimen:** Cell culture isolate with CPE.
Collection/Preservation:	**Storage Instructions:** If shipment of isolate will be delayed, store isolate at -70° C.
Causes for Rejection:	**Sample Container:** Cell culture tube or sterile cryovial.
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Serotyping of clinical isolates is based on immunofluorescence tests using monoclonal antibodies or serum neutralization tests using polyclonal antibodies.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Cell culture tube with CPE: ambient temperature. Frozen isolate: on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87253	**Fees:**

Erysipeloid (Culture – Isolation)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 7-21 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals	
Turnaround Time: 7-21 days	**Reference Range:** No bacteria isolated.
Limitations: Specimen should be collected before initiating antibiotic therapy.	**Interpretation:** No bacteria isolated indicates that there were no viable organisms in the specimen submitted.
Specimen Requirements	
Specimen Collection: venipuncture, biopsy	**Sample Type:** blood, biopsy
Volume/Amount Required: 20 mL whole blood,	**Preferred Specimen:** blood, biopsy
Collection/Preservation: If suspecting endocardidis or septicemia, collect blood by venipuncture and hold at ambient temperature. If skin lesion, collect by biopsy through the full thickness of skin at the advancing edge of the infected area.	**Storage Instructions:** Blood: ambient temperature Biopsy material: 2-8° C
Causes for Rejection: Insufficient specimen, demographic information does not match specimen;	**Sample Container:** tiger top or red top vacutainer,
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Since there is apparently little serologic response to infection with *E. rhusiopathiae*, serological tests are not useful for diagnosis. Veterinarians, abattoir workers, fish handlers, and butchers are at particular risk for this infection.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: 2-25°C	**Shipping Requirements:** Triple contained, In accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87070	**Fees:**

Erysipeloid (Culture – Identification)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 7-21 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals	
Turnaround Time: 7-21 days	**Reference Range:** Genus and species reported
Limitations: Culture must be viable for studies.	**Interpretation:** Identification of *Erysipelothrix* should always be considered significant.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: One specimen per patient	**Preferred Specimen:** Pure culture on agar slant
Collection/Preservation:	**Storage Instructions:** Ambient temperature
Causes for Rejection: Broken in transport, Name on tube/submission form do not match.	**Sample Container:** Agar slant in screw cap tube
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information:	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, biosafety level 2
Transport Temperature: 2-25° C	**Shipping Requirements:** Triple contained, In accordance with federal shipping regulations for infectious agent.
Billing	
CPT Code: 87077	**Fees:**

Escherichia coli 0157:H7 Culture (Isolation)

Test Includes: Conventional biochemicals, EHEC toxin testing, PCR.	
Reporting	
Results Available: 5-10 days.	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals, EHEC toxin testing, PCR.	
Turnaround Time: 5-10 days	**Reference Range:** No *E. coli* O157:H7 isolated. No Shiga Toxin demonstrated.
Limitations: Isolation of *E. coli* O157:H7 is dependent on viable organisms. Stool specimens should be collected prior to the initiation of antimicrobial therapy. Premier EHEC will generate a positive signal when Shiga toxin is present in the specimen at detectable quantities. A positive test does not preclude the presence of other infectious organisms. Toxin expression may be lost upon serial passage.	**Interpretation:** No *E. coli* O157:H7 means that there are no detectable (viable) organisms in the specimen submitted. Absence of toxin means that there is no detectable shiga toxin in the specimen.
Specimen Requirements	
Specimen Collection: fresh stool.	**Sample Type:** Stool, Rectal swab
Volume/Amount Required: > 10 mL liquid stool; > 20 g solid or semi-solid stool.	**Preferred Specimen:** Fresh stool < 24 hours old; Rectal swab submitted in Cary-Blair, Stuart's or Amies transport.
Collection/Preservation: Collect in dry, clean Leak proof container and store at 2-8° C.	**Storage Instructions:** Store stool at 2-8° C.
Causes for Rejection: Unpreserved stool > 24 hours old for culture. > 7 days for toxin assay.	**Sample Container:** Clean, dry leak-proof container; Enteric transport.
Sample Test Kit:	**Availability:** Tested Monday – Friday. Outbreak testing: Saturday-Sunday with prior notification.
Diagnostic Information: Stool specimens should be collected in the acute phase of the illness and submitted on ice packs within 24 hours of collection. See Aerobic Bacterial Culture, Stool (Isolation).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle Body fluids using universal precautions. Stool and broth storage prior to premier EHEC testing: Stool specimens and broths may be held up to 7 days at 2-8° C before testing in the EIA. If testing is not performed within this time period, the specimens should be frozen at -70° C. Repeated freeze-thaws should be avoided.

Transport Temperature: 2-8° C	**Shipping Requirements:** Triple contained, In accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87046	**Fees:**

Escherichia coli 0157:H7 Culture (Identification)

Test Includes: Conventional biochemicals, EHEC toxin testing, PCR.	
Reporting	
Results Available: 5-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals, EHEC toxin testing, PCR.	
Turnaround Time: 5-7 days	**Reference Range:** By report: Genus, species, and serotype (if shiga toxin positive)
Limitations: Organism must be viable.	**Interpretation:** Identification of E. coli O157:H7 should be considered significant.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: one specimen per patient.	**Preferred Specimen:** Pure culture on agar slant
Collection/Preservation: May be kept at ambient temperature.	**Storage Instructions:** Ambient temperature.
Causes for Rejection: Broken in transport, expired transport media used.	**Sample Container:** Agar slant in screw cap tube
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: See Aerobic Bacterial Culture (Identification).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent biosafety level 2
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained, In accordance with federal shipping regulations for Infectious agent.
Billing	
CPT Code: 87077	**Fees:**

Escherichia coli 0157:H7 or other Shiga toxin E. coli (Toxin Testing)

Test Includes: Premier EHEC EIA toxin test.	
Reporting	
Results Available: 2-5 days.	**Contact #s:** (512) 458-7582
Reference	
Method: EIA toxin test	
Turnaround Time: 2-5 days	**Reference Range:** No Shiga toxin demonstrated
Limitations: Premier EHEC will generate a positive signal when Shiga toxin is present in specimen at detectable quantities. A positive test does not preclude the presence of other infectious organisms. Toxin expression may be lost upon serial passage.	**Interpretation:** Negative results indicate lack of detectable amounts of Shiga toxin present in sample.
Specimen Requirements	
Specimen Collection: Stool, Pure culture.	**Sample Type:** Fresh stool; Pure culture.
Volume/Amount Required: 10 g or 10 mL of fresh stool	**Preferred Specimen:** Fresh stool; Pure Culture.
Collection/Preservation: Keep stools between 2-8°C; Pure cultures may be kept at ambient temperature.	**Storage Instructions:** Store stools between 2-8° C or freeze at -70° C; Pure cultures may be stored at ambient temperature.
Causes for Rejection: Insufficient amount of sample to perform test; Specimens > 7 days unless frozen.	**Sample Container:** Leak-proof container
Sample Test Kit: Premier EHEC EIA toxin test	**Availability:**Tested Mon. – Fri. Outbreak situations: Saturday-Sunday- with prior notification.
Diagnostic Information: Stools are accepted for testing with prior notification of the Clinical Bacteriology Section laboratory at 458-7582. Stools should be shipped on wet ice packs. Pure cultures for toxin testing should be shipped safely contained.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions. Stool and broth storage prior to premier EHEC testing: Stool specimens and broths may be held up to 7 days at 2-8° C before testing in the EIA. If testing is not performed within this time period, the specimens should be frozen at -70° C. Repeated freeze-thaws should be avoided.
Transport Temperature: 2-8° C	**Shipping Requirements:** Triple contained, In accordance with federal shipping regulations for infectious agent.
Billing	
CPT Code: 87427	**Fees:**

Escherichia coli 0157:H7 or other Shiga toxin E. coli Culture (Typing)

Test Includes: Pulse Field Gel Electrophoresis (PFGE)	
Reporting	
Results Available: 4-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Pulse Field Gel Electrophoresis (PFGE)	
Turnaround Time: 4-7 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required:	**Preferred Specimen:** Pure Culture on agar slants
Collection/Preservation:	**Storage Instructions:** ambient temperature
Causes for Rejection: Specimen broken in transport	**Sample Container:**
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Molecular typing performed at TDSHS as part of the PulseNet program.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, biosafety level 2.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained; infectious agent
Billing	
CPT Code: 87077	**Fees:**

Farmer's Lung (Culture - Isolation)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Culture; Sputum
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information:	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: 87102	**Fees:**

Farmer's Lung (Culture - Identification)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Culture; Sputum
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information:	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: 87102	**Fees:**

Farmer's Lung (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** Negative
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:**
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum specimens are forwarded to the CDC. Antigens include Micropolyspora faenj, Thermactinomyces candidas, and Thermoactinomyces vulgaris. Precipitin bands are presumptive evidence for actinomycotic hypersensitivity pneumonitis. There are false-positive reactions. Specimens must be submitted with a complete medical history.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86671	**Fees:**

Fasciolopsis (Microscopic – Direct Concentration)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 458-7650
Reference	
Method: Microscopic examination	
Turnaround Time: 24 hours	**Reference Range:** No parasites found
Limitations: Specimen must be collected and placed in formalin to preserve the parasites. Adult flukes may be placed in ethyl alcohol.	**Interpretation:** Negative report indicative of no visible parasites found in the specimen.
Specimen Requirements	
Specimen Collection: Fresh feces, Tissue	**Sample Type:** Feces; Fluke ID; Tissue Section
Volume/Amount Required: 15 mL liquid stool, 15 g stool	**Preferred Specimen:** Feces; Fluke ID; Tissue Section
Collection/Preservation: Collect stool and place in formalin preservative. Ambient temperature. Adult flukes should be placed in ethyl alcohol.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Unpreserved stool > 5 hours old.	**Sample Container:** Leak-proof container
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Fecal specimens must be sent in formalin. Adult flukes must be sent in ethyl alcohol. Referred material accepted from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions. Formalin is a poison, handle with care.
Transport Temperature: Ambient temperature.	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87015	**Fees:**

Filariasis (Microscopic – Direct Giemsa Stain)

Test Includes: Microscopic examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 24 hours	**Reference Range:** No parasites found
Limitations:	**Interpretation:** Negative report indicative of no visible parasites found in the specimen.
Specimen Requirements	
Specimen Collection: venipuncture	**Sample Type:** Venous Blood- EDTA
Volume/Amount Required: 2 mL whole blood	**Preferred Specimen:** Venous Blood- EDTA
Collection/Preservation: Venous blood in purple cap tube: Time of collection is distinct for suspected parasite. Collection of blood specimen: Loa Loa- 10 AM- 2 PM Brugia or Wuchereria- At night after 8 PM Masonella- Any time Onchocerca- Any time	**Storage Instructions:** Ambient temperature
Causes for Rejection: Incorrect collection tube	**Sample Container:** Purple cap vacutainer
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Collection of blood specimen: Loa Loa- 10 AM- 2 PM; Brugia or Wuchereria- At night after 8 PM; Masonella- Any time; Onchocerca- Any time	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87177	**Fees:**

Food Poisoning (Culture - Isolation)

Test Includes: BAX, Vidas, Conventional biochemicals	
Reporting	
Results Available: 3-14 days	**Contact #s:** (512) 458-7562
Reference	
Method: BAX, Vidas, Conventional biochemicals	
Turnaround Time: 14 days	**Reference Range:** No pathogens isolated.
Limitations: Food specimens must be collected by sanitarians or appointees. No food specimens are accepted from private citizens without collection by TDSHS official.	**Interpretation:** No enteric pathogens isolated is indicative of no viable organisms present in the food sample.
Specimen Requirements	
Specimen Collection: Food samples	**Sample Type:** Food, 25 grams
Volume/Amount Required: 25 grams for each pathogen to be tested.	**Preferred Specimen:** Portion 25 grams minimum sample size for each pathogen to be tested.
Collection/Preservation: Food must be collected by a sanitarian or health official. A minimum of 25 grams of each food item is collected and stored in separate whirl paks or clean, dry containers. Store food at 2-8° C. Ship overnight.	**Storage Instructions:** at 2-8° C
Causes for Rejection: insufficient amount, improper storage.	**Sample Container:** Clean, dry, leak-proof container.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Food samples must be collected by authorized Public Health Officials. No samples are accepted from private physicians or citizens. Contact the Public Health Department in your area.	
Specimen Submission	
Required Request Form: G-22	**Specimen Handling:** Specimens must be collected by an authorized Public health official and if necessary with a chain of custody form in place.
Transport Temperature: 2-8° C	**Shipping Requirements:** 2-8° C, overnight
Billing	
CPT Code: none	**Fees:**

Food (Culture –(Identification)

Test Includes: See individual food borne pathogens	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure culture.
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Samples are accepted only if physician certifies that patient is still ill and aid to diagnosis is needed for treatment. Original sample must be retained by submitter for analysis by private laboratory if litigation results. For Salmonella, see Salmonellosis Culture–(Identification). For Shigella, See Shigellosis Culture (Identification). For Escherichia coli, Escherichia coli 0157:H7 Culture (Identification) Escherichia coli 0157:H7 or other Shiga toxin E. coli (Toxin Testing). For Vibrio species. For Yersinia, see Yersinia enterocolitica (Culture – Identification).	
Specimen Submission	
Required Request Form: G-22	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: none	**Fees:**

Food (Pathogens –(Isolation)

Test Includes: See Food Poisoning, Isolation	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 14 days	**Reference Range:** None isolated
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Portion 25 grams minimum sample size for each pathogen to be tested.
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: For Salmonella, see Salmonellosis Culture–(Identification). For Shigella, See Shigellosis Culture (Identification) For Escherichia coli, Escherichia coli 0157:H7 Culture (Identification) Escherichia coli 0157:H7 or other Shiga toxin E. coli (Toxin Testing). For Vibrio species see Vibrio cholerae, (Culture – Identification) For Yersinia, see Yersinia enterocolitica (Culture – Identification). See Staphylococcus (Culture – Enterotoxin testing) See Clostridium perfringens (Culture - Isolation) See Campylobacter Culture –(Isolation) See Bacillus cereus (Culture – Isolation).	
Specimen Submission	
Required Request Form: G-22	**Specimen Handling:**
Transport Temperature: 2-8° C (refrigerated)	**Shipping Requirements:**
Billing	
CPT Code: none	**Fees:**

Food Poisoning Culture (Toxin Detection)

Test Includes: See Staphylococcus (Culture – Enterotoxin Testing)	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 2-4 days	**Reference Range:** Not detected
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Portion 25 grams minimum sample size for each toxin or pathogento be tested.
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Food samples must be collected by authorized Public Health Officials. No samples are accepted from private physicians or citizens. Contact the Public Health Department in your area. See Staphylococcus (Culture – Enterotoxin testing).	
Specimen Submission	
Required Request Form: G-22	**Specimen Handling:**
Transport Temperature: 2-8° C (refrigerated)	**Shipping Requirements:**
Billing	
CPT Code: none	**Fees:**

Giardiasis (Microscopic – Direct Concentration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:** No parasites found indicates there were no visible parasites in specimen submitted.
Specimen Requirements	
Specimen Collection: Feces	**Sample Type:** Feces
Volume/Amount Required: 15 mL liquid stool, 15 g stool,	**Preferred Specimen:** Feces in PVA or formalin.
Collection/Preservation: Collect liquid stool or stool and place immediately into PVA and formalin preservative. Store at ambient temperature.	**Storage Instructions:** ambient temperature
Causes for Rejection: Unpreserved stool > 5 hours old.	**Sample Container:** PVA or formalin transport for parasites.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Fecal specimens must be sent in fresh (less than five hours) or in PVA and formalin. Referred material accepted from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions. PVA and formalin are considered a poison.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: none	**Fees:**

Gonorrhea Culture (Isolation)

Test Includes: Conventional biochemicals, Accuprobe.	
Reporting	
Results Available: 2-4 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals, DNA probe test.	
Turnaround Time: 2-4 days	**Reference Range:** Negative for *N. gonorrhoeae*
Limitations: Organisms must be viable and capable of growing on transport media.	**Interpretation:** Negative for N. gonorrhoeae indicates that there were no viable organisms in the specimen submitted.
Specimen Requirements	
Specimen Collection: cervix, urethra, rectum, or throat.	**Sample Type:** Cervical or urethral swab; Rectal swab; Throat swab. Vaginal swab
Volume/Amount Required: One specimen per patient	**Preferred Specimen:** Cervical or urethral Swab; Rectal Swab; Throat Swab
Collection/Preservation: Specimens should be collected with Dacron or rayon swabs. Calcium alginate may be toxic to gonococci. Cotton swabs may be use, but some cotton contains fatty acid that is inhibitory to gonococci. Do not use lubricants on instruments as these may be inhibitory to gonococci. Swabs should be taken from the cervix, urethra, rectum or throat and applied to transport media immediately. Transport in a CO_2 atmosphere at ambient temperature.	**Storage Instructions:** Ambient temperature, CO_2 Atmosphere. DO NOT refrigerate.
Causes for Rejection: No identifying marks on sample and/or paperwork.	**Sample Container:** Thayer-Martin or Martin-Lewis agar bottle or plate with CO_2 atmosphere.
Sample Test Kit:	**Availability:** Tested Monday – Saturday
Diagnostic Information: Microscopic screening by gram-stain is not offered. Genetic probe preferred detection method unless medicolegal or under 13 years old. See Gonorrhea (Culture – Genetic Probe)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Body fluids handled taking universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87070	**Fees:**

Gonorrhea Culture (Identification)

Test Includes: Conventional biochemicals; susceptibility testing [for epidemiological purposes only]; Beta-lactamase.	
Reporting	
Results Available: 5-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals; susceptibility testing [for epidemiological purposes only]; Beta-lactamase.	
Turnaround Time: 5-7 days	**Reference Range:** By report
Limitations: Organism must be viable.	**Interpretation:** Identification of *N. gonorrhoeae* is a sexually transmitted disease reportable to the Department of State Health Services HIV/STD section.
Specimen Requirements	
Specimen Collection: See Gonorrhea Culture (Isolation)	**Sample Type:** Pure culture.
Volume/Amount Required: One specimen per patient	**Preferred Specimen:** Pure Culture on appropriate media.
Collection/Preservation: Keep at atmospheric conditions favorable for the growth of *N. gonorrhoeae.*	**Storage Instructions:** Store at appropriate atmospheric conditions.
Causes for Rejection: No identifying marks on sample and/or paperwork, broken in transport	**Sample Container:** Agar slant in screw cap tube or agar plate in saf-t-pak transport
Sample Test Kit:	Availability: Tested Monday – Friday
Diagnostic Information: *Neisseria gonorrhoeae* has growth requirements, which include 3-6% CO_2 and appropriate media such as Thayer-Martin or Chocolate agar. Refrigeration of *N. gonorrhoeae* is **NOT** recommended. Overnight shipment is recommended. In the event of a suspected Sexual Abuse issue, please ensure that culture is submitted utilizing a chain of custody procedure.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle as an infectious agent. Take care to prevent transfer of organism to conjuctiva.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Gonorrhea (Culture – Genetic Probe)

Test Includes: GenProbe Pace 2C, Pace 2 CT, and Pace 2 GC.	
Reporting	
Results Available: 2-3 days	**Contact #s:** (512) 458-7582
Reference	
Method: GenProbe Pace 2C, Pace 2 CT, and Pace 2 GC.	
Turnaround Time: 2-3 days	**Reference Range:** Negative for *Neisseria gonorrhoea*
Limitations: Results dependent on adequacy of sampling. Specimen must be collected and transported using Gen-Probe collection kit.	**Interpretation:** Negative results indicate that the patient does not have detectable amounts of *N. gonorrhoeae* rRNA.
Specimen Requirements	
Specimen Collection: Only swabs contained in the PACE specimen collection kit can be used to collect patient specimens.	**Sample Type:** Female endocervical swab; Male urethral swab.
Volume/Amount Required: 1 collector per patient.	**Preferred Specimen:** Endocervical or urethral Swab
Collection/Preservation: Only swabs contained in the PACE specimen collection kit can be used to collect patient specimens. Follow instructions on collector sleeve. Store at ambient temperature.	**Storage Instructions:** Store at ambient temperature.
Causes for Rejection: Wrong name on collection tube; Two swabs in tube; No swab in tube; Wooden swab in tube; Metal swab in tube; Insufficient amount of liquid to test, > 7 days old, > 80 uL of blood in specimen.	**Sample Container:** Gen-Probe transport tube.
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: Genetic probe available only to those in STD and Family Planning Programs and to adolescent THSteps (EPSDT) patients for whom collectors are available. See Chlamydia (Genetic Probe).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** body fluid handled with universal precautions
Transport Temperature: Ambient temperature	**Shipping Requirements:** In accordance with federal shipping regulations for diagnostic specimens, noninfectious.
Billing	
CPT Code: 87797, 87490, 87590, 87491, 87591	**Fees:**

Granuloma Inguinale (Microscopic - Direct)

Test Includes: Microscopic Examination	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Exudate
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information:	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: 87205	**Fees:**

Haemophilus species Culture –(Identification)

Test Includes: Conventional biochemicals, serotyping	
Reporting	
Results Available: 5-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals, serotyping.	
Turnaround Time: 5-7 days	**Reference Range:** By report
Limitations: Organism must be viable. Haemophilus species have special growth requirements that must be supplied in order for viability.	**Interpretation:** By report
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture.
Volume/Amount Required: One specimen per patient.	**Preferred Specimen:** Pure Culture on appropriate media.
Collection/Preservation: Organism must be kept at appropriate atmospheric conditions to be viable for testing.	**Storage Instructions:** Ambient temperature, appropriate atmospheric conditions.
Causes for Rejection: Broken in transport, expired transport media.	**Sample Container:** Agar slant in screw cap tube, or agar plate in transport with appropriate atmospheric conditions.
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: See Aerobic Bacterial Culture (Isolation)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agents, biosafety level 2.
Transport Temperature: Ambient temperature < 48 hours	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Haemophilus species Culture (Typing *H. influenzae* only)

Test Includes: Serological testing	
Reporting	
Results Available: 5-7 days.	**Contact #s:** (512) 458-7582
Reference	
Method: Slide agglutination test	
Turnaround Time: 5-7 days	**Reference Range:** By report
Limitations: Organism must be confirmed as biochemically H. influenzae for culture typing to be valid test result. Organism must be viable for culture typing.	**Interpretation:** By report
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture.
Volume/Amount Required: One specimen per patient.	**Preferred Specimen:** Pure culture on appropriate media.
Collection/Preservation: Organism must be kept at appropriate atmospheric conditions.	**Storage Instructions:** Ambient temperature, appropriate atmospheric conditions.
Causes for Rejection: No identifying marks on sample and/or paperwork.	**Sample Container:** Agar slant in screw cap tube, or agar plate in transport with appropriate atmospheric conditions.
Sample Test Kit:	**Availability:** Tested Monday – Friday**.**
Diagnostic Information: *H. influenzae* strains are typed only when from sterile sources. *H. influenzae* strains from critical sources are sent to the CDC if untypeable. At present, all *H. influenzae* isolated from > 5 years of age are submitted to the CDC for special studies.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, Biosafety level 2
Transport Temperature: 5-7 days	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Hantavirus (Serological – Enzyme Immunoassay)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 5-7 days	**Reference Range:** <1.00
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed by request
Diagnostic Information: Sin nombre hantavirus is a major cause of hantavirus pulmonary syndrome, a severe and often fatal form of adult respiratory distress. Sera are tested for the presence of IgG and IgM antibodies specific for Sin Nombre virus. Recent infection is indicated by the presence of IgM antibody. Further investigation can be done on tissue specimens or specimens from rodents at the CDC.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86790	**Fees:**

Hepatitis A (Serological – Enzyme Immunoassay for HAVAb-total and HAV IgM)

Test Includes: Enzyme Immunoassay for Hepatitis A antibodies	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 5-7 days	**Reference Range:** <1.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held frozen at ≤-20°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test run once per week
Diagnostic Information: Tests are available only to Department's epidemiologists to investigate outbreaks. Test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86708 - Total, 86709 - IgM	**Fees:**

Hepatitis B (Serological – Enzyme Immunoassay)
HbsAg,and Anti-HBsAg, Total antibody or HBcAb-Total of IgM)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 1-2 days for HbsAg, 3-4 days for Anti-HbsAg and 5-7 days for HbcAb-Total	**Reference Range:** <1.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at ≤-20°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Tests run daily
Diagnostic Information:	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86704 - Core, 86706 - sAb, 87340 - sAg	**Fees:**

Hepatitis B (Serological – Enzyme Immunoassay for Hepatitis B eAg or Anti-Hepatitis B eAg)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 3-4 days	**Reference Range:** <1.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that patient does not have detectable antibody to infectious agent Reactive indicates that patient has detectable antibody to infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum
Collection/Preservation: Serum must be separated from the presence of the blood clot within two hours of the time of collection. If the serum samples are going to be shipped and will be delivered to the laboratory within 48 hours of collection, they must be shipped on cold packs, between 2° and 8°C. If the samples will not be delivered to the laboratory within 48 hours of collection at these temperatures, then the samples must be frozen at -20°C or lower and shipped on dry ice at 2-8°C.	**Storage Instructions:** Separated serum may be held at 2-8°C, or frozen at -20°C.
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, specimens received with extended transit time, or received at incorrect temperature.	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Tests run daily
Diagnostic Information:	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86707 - eAb, 87350 - eAg	**Fees:**

Hepatitis C (Serological – Enzyme Immunoassay)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 3-4 days	**Reference Range:** <0.620
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:**
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 5 mL Serum	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top, tiger top, or spun SST tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Tiger top or spun SST tube
Sample Test Kit:	**Availability:** test run 3 times weekly
Diagnostic Information: Hepatitis C virus (HCV) causes 50-75% of cases described as non-A non-B hepatitis. The virus is spread primarily via blood and blood products. Known high-risk groups for HCV hepatitis include transfusion recipients, intravenous drug users, individuals with "street" tattoos and health care workers with frequent body fluid contact. Test is performed 3 times per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Separated serum or spun SST tubes at 2-8°C (refrigerated) or serum -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum tubes, or SST, within 5 days may be shipped overnight on cold packs (2-8°C), or >5 days ship serum frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86803, 86804 (RIBA)	**Fees:**

Herpes Simplex (Culture - Isolate)

Test Includes: Cell culture	
Reporting	
Results Available: 1-12 days	**Contact #s:** 512-458-7594
Reference	
Method: Cell culture	
Turnaround Time: 1-12 days	**Reference Range:** Herpes simples not isolated
Limitations:	**Interpretation:** A result of "Herpes simplex virus not isolated" does not necessarily mean absence of disease. The success of virus isolation depends a great deal on the submissions of the proper specimen, collected at the right time, adequately maintained, and shipped with the least possible delay.
Specimen Requirements	
Specimen Collection: Specimens should be collected at an appropriate anatomic site and at the proper time after infection because viruses are generally shed for only a short period of time. Refer to Specimen Collection by Type table for additional instructions.	**Sample Type:** See preferred specimen
Volume/Amount Required: Swab in 2-4 mL of viral transport media, or tissue in enough viral transport media to prevent drying	**Preferred Specimen:** Vesicular fluid/swab; Tissue
Collection/Preservation: Viral transport media.	**Storage Instructions:** Arriving < 3-4 days after collection, store and send at 2-8° C. Arriving > 3-4 days after collection, store and send at -70° C.
Causes for Rejection: Specimens submitted on a preservative such as formalin.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Isolation services are limited to designated public health programs. A variety of cell monolayers which support the growth of herpes simplex are inoculated and observed for 10 days. If characteristic CPE is observed, confirmation of identification will be performed.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Arriving <3-4 days: 2-8° C Arriving >3-4 days: send on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252	**Fees:**

Herpes Simplex (Culture - Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 1-12 days	**Contact #s:** 512-458-7594
Reference	
Method: Immunofluorescence	
Turnaround Time: 1-12 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: Fill monolayer tube with media if transporting at ambient temperature. If transporting on dry ice, send 1-2 mL.	**Preferred Specimen:** Cell culture isolate with CPE.
Collection/Preservation:	**Storage Instructions:** If shipment of isolate will be delayed, store at -70° C.
Causes for Rejection:	**Sample Container:** Cell culture tube or sterile cryovial.
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Isolation services are limited to designated public health programs.Identification is based on immunofluorescence test using monoclonal antibodies.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Cell culture tube with CPE: ambient temperature. Frozen isolate: on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87273, 87274	**Fees:**

Histoplasmosis (Culture - Isolation)

Test Includes: Isolation of fungus and identification by Gen-Probe Accuprobe Test	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Accuprobe culture confirmation test; hybridization of ribosomal RNA to probe detected by chemiluminesence	
Turnaround Time: 21-28 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:** Positive by DNA Probe Test means that the probe detected ribosomal RNA of Histoplasma capsulatum from the isolate.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical specimen.
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Sputum; Tissue; Exudate; Blood; Bone marrow
Collection/Preservation: No preservative.	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen, unless blood.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline. Blood specimens less than 5 mL are unacceptable. Refrigerated blood specimens will be rejected.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL of sterile saline to tissue if needed to maintain moisture during transport. If blood, prefer yellow-top with ACD; may also contain SPS. Green-top is acceptable with lithium or heparin.
Sample Test Kit:	**Availability:** Testing available upon approval by Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87102	**Fees:**

Histoplasmosis (Culture – Genetic Probe Confirmation)

Test Includes: Identification of isolate by Gen-Probe Accuprobe Test	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-458-7318, ext. 2687
Reference	
Method: Accuprobe culture confirmation test; hybridization of ribosomal RNA to probe detected by chemiluminesence	
Turnaround Time: 7-10 days	**Reference Range:** By Report
Limitations: Positive Probe Test does not mean isolate is still viable.	**Interpretation:** Positive by DNA Probe Test means that the probe detected ribosomal RNA of Histoplasma capsulatum from the isolate.
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative	**Storage Instructions:**
Causes for Rejection: Culture infested with mties.	**Sample Container:** Triple-contained
Sample Test Kit:	**Availability:** Accuprobe test is run once weekly.
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code:	**Fees:**

Histoplasmosis (Serological – Single Serum)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method: Complement Fixation (CF)	
Turnaround Time: 5-7 days	**Reference Range:** < 1:8 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test is run once per week
Diagnostic Information: Serology is available for case diagnosis. A single serum is required. CF titers of >1:8 are generally considered evidence indicative of histoplasmosis. Higher titers increase the probability of infection. However, positive titers are also seen with fungal infections other than histoplasmosis, so confirmation of antibody specificity with ID procedures is performed on reactive specimens. Test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-2°C) and mailed on dry ice.
Billing	
CPT Code: 86698	**Fees:**

Histoplasmosis (Serological – Spinal Fluid)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method: Complement Fixation (CF)	
Turnaround Time: 5-7 days	**Reference Range:** <1:8 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Spinal Tap	**Sample Type:**
Volume/Amount Required: 1-5 mL CSF	**Preferred Specimen:** Single cerebrospinal fluid (minimum 1.0mL)
Collection/Preservation:	**Storage Instructions:** Freeze spinal fluid immediately after collection
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Serology is available for case diagnosis. A single CSF specimen is required. Test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contained, frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86698	**Fees:**

Histoplasmosis (Serological – Immunodiffusion)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method: Immunodiffusion (ID)	
Turnaround Time: 5-7 days	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed once per week
Diagnostic Information: The immunodiffusion correlates both in sensitivity and clinical utility with the CF test. Positive immunodiffusion reactions involve one or more specific precipitin bands. Of these, the first to appear in active histoplasmosis is the "M" band, which is seen in approximately 70% of proven cases. The "H" band is usually seen in active and progressive histoplasmosis and almost always in the presence of the "M" band. Test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86698	**Fees:**

HIV-1, Screen (Serological – Enzyme Immunoassay)

Related Agents: Acquired Immunodeficiency Virus

Test Includes: Enzyme Assay (EIA)	
Reporting	
Results Available: 1 day	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 1-2 days	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 5 mL Serum, or filter paper with 3 circles completely filled.	**Preferred Specimen:** Serum, spun SST tube, or Filter Paper Blood Spot
Collection/Preservation: Red top, tiger top, or spun SST tube	**Storage Instructions:** Separate serum or spun SST tubes may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Tiger top or spun SST tube
Sample Test Kit:	**Availability:** Test performed daily
Diagnostic Information: The EIA procedure for the detection of antibodies to HIV is a screening procedure. All positive or borderline results require validation by the Western Blot Confirmatory procedure. The western blot will automatically be performed and charged on all specimens with positive or borderline results. Specimens with Nonreactive EIA results will not be tested by western blot unless specifically requested.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Separated serum or spun SST tubes at 2-8°C (refrigerated) or serum -20°C (frozen). Dried blood spots ambient up to 7 days.	**Shipping Requirements:** Triple contain. Separated serum, or spun SST Tubes within 5 days may be shipped overnight on cold packs (2-8°C), or > 5 days, ship serum frozen (-20°C) and mail on dry ice. DBS ambient up to 7 days, > 7 days 2-8°C or frozen (-20°C) on dry ice.
Billing	
CPT Code: 86701	**Fees:**

HIV-1, Confirmation (Serological – Western Blot)

Test Includes: Western Blot for antibodies to HIV-1	
Reporting	
Results Available: 1-2 days	**Contact #s:**
Reference	
Method: Western Blot	
Turnaround Time: 1-2 days	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 5 mL Serum	**Preferred Specimen:** Serum, Oral Fluid; Filter Paper Blood Spot
Collection/Preservation: Red top, tiger top, or spun SST tube, Filter Paper or Oral Fluid	**Storage Instructions:** Separated serum or spun SST tubes may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Tiger top tube, or spun SST Tube
Sample Test Kit:	**Availability:** Test performed daily
Diagnostic Information Available on repeatedly reactive EIA specimens. The major bands of diagnostic significance on a reactive HIV-1 western blot are the glycoproteins gp41, gp120 and gp160 encoded by the envelope (ENV) gene; p17, p24, p55 encoded by the group-specific antigen gene (GAG); and p31, p55 and p66 encoded by the polymerase (POL) gene. The interpretative criteria employed are those proposed by APHL and the CDC, whereby serum reactivity with two or more of the following antigens defines a positive result: p24, gp41, gp120/160. Sera reactive with less than two of these antigens and sera reactive with other antigens are reported as indeterminate and a follow-up specimen is requested. Western blot tests for oral fluid and filter paper blood spots are now FDA approved for diagnostic purposes and no longer require a follow-up serum specimen.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Separated serum or spun SST tubes at 2-8°C (refrigerated) or serum -20°C (frozen). Dried Blood Spots ambient up to 7 days. Oral fluid ambient up to 21 days.	**Shipping Requirements:** Triple contain. Separated serum, or spun SST Tubes, within 5 days may be shipped overnight on cold packs (2-8°C), or > 5 days, ship serum frozen (-20°C) and mail on dry ice. DBS ambient up to 7 days, > 7 days 2-8°C or frozen (-20°C) on dry ice. Oral Fluid ambient up to 21 days.

Billing	
CPT Code: 86689	**Fees:**

HIV-2, Screen (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** serum, plasma
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Serum, plasma
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum forwarded to the CDC from patients with reactive HIV-2 if HIV1/HIV2 combo EIA screen reactive or appropriate risk factors. Patient history required. HIV-2 is cross-reactive with HIV-1 and has been detected with the whole viral lysate EIA used by TDSHS.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86702	**Fees:**

HTLV-I-II (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum, Plasma
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Serum, plasma
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum or plasma will be forwarded to the CDC for testing.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86687,86688	**Fees:**

Hookworm (Microscopic – Direct Wet Smears Concentration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:** No parasite found indicates that there were no visible parasites in the specimen submitted.
Specimen Requirements	
Specimen Collection: feces	**Sample Type:** Feces, unpreserved (less than 5 hours), formalin preserved
Volume/Amount Required: 15 mL liquid stool, 15 g stool	**Preferred Specimen:** Formalin preserved feces
Collection/Preservation: Collect liquid stool or stool and immediately place into formalin preservative. Hold at ambient temperature.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Unpreserved stool > 5 hours.	**Sample Container:** Formalin transport for parasites
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Demonstration of eggs in formalin preserved stool samples. If stool is unpreserved for over 24 hours, the eggs may continue to develop and the larvae may hatch for identification.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Handle body fluids using universal precautions. Formalin is considered a poison.
Transport Temperature:	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87177	**Fees:**

Influenza (Culture – Isolation)

Test Includes: Cell Culture	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-458-7594
Reference	
Method: Cell Culture	
Turnaround Time: 2-14 days	**Reference Range:** No influenza virus isolated
Limitations:	**Interpretation:** A result of "No influenza virus isolated" does not necessarily mean absence of disease. The success of virus isolation depends a great deal on the submission of the proper specimen, collected at the right time, adequately maintained, and shipped with the least possible delay.
Specimen Requirements	
Specimen Collection: Specimens should be collected at an appropriate anatomic site and at the proper time after infection because viruses are generally shed for only a short period of time. Refer to Specimen Collection by Type table for additional instructions.	**Sample Type:** See preferred specimens
Volume/Amount Required: Swabs in 2-4 mL of influenza transport media.	**Preferred Specimen:** Throat Swab, Nasopharyngeal Secretions, Nasopharyngeal aspirate, Nasal wash, Nasal swab.
Collection/Preservation: Influenza transport media, Viral transport media.	**Storage Instructions:** Arriving < 3-4 days after collection, store and send at 2-8° C. Arriving > 3-4 days after collection, store and send at -70° C.
Causes for Rejection: Specimens submitted on a preservative such as formalin.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Specimens are inoculated onto cell culture monolayers. If characteristic CPE or hemadsorption is observed, confirmation of identification will be performed.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Arriving <3-4 days: 2-8 °C (refrigerated) Arriving >3-4 days send on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252, 87253	**Fees:**

Influenza (Culture – Typing)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-458-7594
Reference	
Method: Immunofluorescence	
Turnaround Time: 2-14 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: Fill monolayer tube with media if transporting at ambient temperature. If transporting on dry ice, send 1-2 mL.	**Preferred Specimen:** Cell culture isolate with CPE.
Collection/Preservation:	**Storage Instructions:** If shipment of isolate will be delayed, store at -70° C.
Causes for Rejection:	**Sample Container:** Cell culture tube or sterile cryovial.
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Typing is based on immunofluorescence test using influenza A and influenza B monoclonal antibodies.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Monolayer with CPE: Ambient temperature. Frozen isolate: on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 86710	**Fees:**

Isopora species (Microscopic – Direct Wet Smears Concentration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:** No parasite found indicates that there were no visible parasites in the specimen submitted.
Specimen Requirements	
Specimen Collection: Feces	**Sample Type:** Feces
Volume/Amount Required: 15 mL liquid stool, 15 g stool	**Preferred Specimen:** Feces, formalin preserved
Collection/Preservation: Collect fresh stool in a clean, dry container. Immediately transfer stool to formalin preservative. Transport at ambient temperature.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Unpreserved stool > 5 hours old.	**Sample Container:** Formalin transport for parasites.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Fecal specimens must be sent in formalin. Specimens are accepted from public health officials. Referred material accepted from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions. Formalin is a poison, handle with care.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87015	**Fees:**

Isopora species (Microscopic – Acid Fast Stain)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic Examination	
Turnaround Time: 3 Days	**Reference Range:** No parasites found
Limitations:	**Interpretation:** No parasites found indicates that there were no visible parasites in the specimen submitted.
Specimen Requirements	
Specimen Collection: feces	**Sample Type:** feces in formalin
Volume/Amount Required: 15 mL liquid stool, 15 g stool	**Preferred Specimen:** Formalin preserved feces.
Collection/Preservation: Collect stool and immediately place in formalin preservative. Ship at ambient temperature.	**Storage Instructions:** Ambient temperature.
Causes for Rejection: Unpreserved stool > 5 hours old	**Sample Container:** Formalin transport for parasites
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Fecal specimens must be sent in formalin. Specimens are accepted from public health officials. Referred material accepted from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions. Formalin is a poison, handle with care.
Transport Temperature: Ambient temperature.	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87177	**Fees:**

Legionellosis Culture (Isolation)

Test Includes: Conventional biochemicals; Direct Immunofluorescent Antibody (DFA) test	
Reporting	
Results Available: 7-21 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals; Direct Immunofluorescent Antibody (DFA) test	
Turnaround Time: 7-21 days	**Reference Range:** No Legionella species isolated. Negative for Legionella species by Direct Immunofluorescent Antibody Test (DFA)
Limitations:	**Interpretation:** In areas of low prevalence, the positive predictive value of direct immuno-fluorescence is unacceptably low. The combination of low sensitivity and false-positive tests indicates that this test should not be performed in most clinical situations without the addition of culture.
Specimen Requirements	
Specimen Collection: endoscopy, biopsy, sputum	**Sample Type:** Tissue; Pleural Fluid; Sputum; Bronchial Washings in sterile, leakproof container. Environmental: water, gaskets, or other water sources connected to a confirmed case
Volume/Amount Required: 2 mL minimum of washings or sputum. Tissue- small piece	**Preferred Specimen:** Tissue; Pleural Fluid; Sputum; Bronchial Washings in sterile, leakproof container. Environmental: water, gaskets, or other water sources connected to a confirmed case
Collection/Preservation: Collect washings using sterile water instead of saline. Saline is inhibitory to *Legionella* species. Keep at 2-8° C. Do not freeze.	**Storage Instructions:** 2-8° C. Do not freeze. Do **not** use dry ice.
Causes for Rejection: Insufficient quantity for testing.	**Sample Container:** Sterile, leak-proof
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Environmental samples are accepted only from health officials in the study of multi-case outbreaks. Isolation specimens must be on ice packs but not dry ice. Dry ice elevates the CO_2 level to a level toxic to Legionella.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: 2-8° C (refrigerated) **Do not ship on dry ice.**	**Shipping Reqs:** Triple contained in accordance with federal shipping regs for diagnostic specimens.
Billing	
CPT Code: 87070	**Fees:**

Legionellosis Culture (Identification)

Test Includes: Conventional biochemicals; Direct Immunofluorescence Antibody Test (DFA)	
Reporting	
Results Available: 7-14 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals; Direct Immunofluorescence Antibody Test (DFA)	
Turnaround Time: 7-14 days	**Reference Range:** By report
Limitations: Organism must be viable for culture studies to be performed.	**Interpretation:** By report
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: one specimen per patient	**Preferred Specimen:** Pure cultures on appropriate media.
Collection/Preservation: Ambient temperature	**Storage Instructions:** Ambient temperature
Causes for Rejection: Name on tube/specimen do not match; Broken in transport.	**Sample Container:** Agar slant in screw cap tube
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Legionella requires cysteine for growth and should be submitted on a media like BCYE agar to insure viability.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Infectious agent, biosafety level 2
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Legionellosis Culture (Typing)

Test Includes: Direct Immunofluorescent Antibody Test (DFA)	
Reporting	
Results Available: 7-14 days	**Contact #s:** (512) 458-7582
Reference	
Method: Direct Immunofluorescent Antibody Test (DFA)	
Turnaround Time: 7-14 days	**Reference Range:** By report.
Limitations: The number of serogroups is limited by the commercially available FITC conjugates. Rare serogroups cannot be typed at this location. These organisms will be forwarded to the CDC for typing.	**Interpretation:** By report.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure cultures on appropriate media,
Volume/Amount Required: One specimen per patient.	**Preferred Specimen:** Pure cultures on appropriate media.
Collection/Preservation:	**Storage Instructions:** Ambient temperature
Causes for Rejection: Specimen broken in transport, expired transport media.	**Sample Container:** Agar slant in screw cap tube.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: See Legionellosis (Microscopic – Direct Fluorescent Antibody)	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Infectious agent, Biosafety level 2
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87147	**Fees:**

Legionellosis (Serological - Immunofluorescence)

Test Includes:	
Reporting	
Results Available: 3-5 days	**Contact #s:**
Reference	
Method: IFA	
Turnaround Time: 3-5 days	**Reference Range:** < 1:64 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Paired Sera; Single Serum
Collection/Preservation: Samples that will be delivered to the laboratory within 8 hours of collection may be transported at room temperature in the original blood collection tube. If the samples are going to be shipped and will be delivered to the laboratory within 48 hours of collection, sera must be separated from the blood and shipped on cold packs, between 2° and 8°C. If the serum samples will not be delivered to the laboratory within 48 hours of collection at these temperatures, then the samples must be frozen at -20°C or lower and shipped on dry ice.	**Storage Instructions:** Separated serum may be held at 2-8°C, or frozen at -20°C.
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, specimens received with extended transit time, or received at incorrect temperature.	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test run every Tuesday and Thursday
Diagnostic Information: A single serum will be tested only if three or more weeks after onset. Single titers of <1:64 are considered Nonreactive. Single titers between 1:64 and 1:128 are considered Nonreactive, but may warrant follow-up testing. Single titers >1:256 are considered evidence of infection at an undetermined time. A fourfold or greater titer increase between acute and convalescent sera provides evidence of recent infection. The test is performed twice per week.	
Specimen Submission	

Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86713	**Fees:**

Legionellosis (Microscopic – Direct Fluorescent Antibody)

Test Includes: Direct Immunofluorescent Antibody Test (DFA)	
Reporting	
Results Available: 1-3 days	**Contact #s:**
Reference	
Method: Direct Immunofluorescent Antibody Test (DFA)	
Turnaround Time: 1-3 days	**Reference Range:** By report
Limitations: Direct Immunofluorescent Antibody Test (DFA) conjugates are commercially available for a limited number of serogroups. Rare or newly discovered serogroups will not be detected using these reagents.	**Interpretation:** In areas of low disease prevalence the positive predictive value is unacceptably low. The combination of low sensitivity and false-positive tests in a low-prevalence environment indicates that this test should not be performed in most clinical situations without culture.
Specimen Requirements	
Specimen Collection: Tissue; Pleural Fluid; Sputum; Bronchial Washings, Pure cultures.	**Sample Type:**
Volume/Amount Required: 2 mL washings, fluid, or small piece of tissue.	**Preferred Specimen:** Tissue; Pleural Fluid; Sputum; Bronchial Washings Pure cultures.
Collection/Preservation: Collect bronchial washings using sterile water instead of saline.	**Storage Instructions:** Ambient temperature.
Causes for Rejection: Name on specimen/form do not match; Broken in transport.	**Sample Container:** Sterile, leak-proof container.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Environmental samples are accepted only from health officials in the study of multi-case outbreaks. Isolation specimens must be iced but not frozen. Direct Immunofluorescence Antibody (DFA) tests allow for typing of Legionella pneumophila 1-6, L. micdadei, L. bozemanii, L. jordanii, L. longbeachea, Legionella dumoffii, Legionella gormanii. All isolates that are non reactive with the above DFA conjugates are submitted to the CDC for further typing.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: 2-8° C **Do Not Ship On Dry Ice**. Pure cultures: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87278	**Fees:**

Leishmaniasis (Culture – Isolation)

Test Includes: Specimens forwarded by TDSHS to CDC with prior arrangement.	
Reporting	
Results Available:	**Contact #s:** 512-458-7560
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:**
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Specimens forwarded by TDSHS to CDC with prior arrangement. Please call 512-458-7560 to make arrangements and instructions on specimen type and shipping temperatures.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87081	**Fees:**

Leishmaniasis (PCR – Forwarded by TDSHS to CDC for testing)

Test Includes: Specimens forwarded by TDSHS to CDC with prior arrangement	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:**
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Specimens forwarded by TDSHS to CDC with prior arrangement. Please call 512-458-7560 to make arrangements and instructions on specimen type and shipping temperatures. If culture is positive, PCR can be performed for speciation.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: 87797	**Fees:**

Leishmaniasis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** >1:16 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Specimens forwarded by TDSHS to CDC with prior arrangement. Prior notification is requested (512) 458-7760. A detailed patient history is required. Titers of >1:16 are considered positive. The diagnosis of dermal or cutaneous leishmaniasis is more difficult than the visceral form, since a detectable immune response is often absent. Cross reactions may occur with Chagas' disease, malaria or schistosomiasis, so positive serological results provide only suggestive support for the diagnosis.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86717	**Fees:**

Leishmaniasis (Microscopic – Giemsa Stain)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 24 hours	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Tissue
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Specimens examined by TDSHS follow up cultures will be forwarded by TDSHS to CDC with prior arrangement.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code: 87177	**Fees:**

Leishmaniasis (Microscopic – H & E Stain)

Test Includes: Microscopic examination	
Reporting	
Results Available: 1 day	**Contact #s: (**512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 24 hours	**Reference Range:** No parasites found
Limitations:	**Interpretation:** No parasites found indicates that there were no visible parasites in the specimen submitted.
Specimen Requirements	
Specimen Collection: biopsy, fine needle aspiration.	**Sample Type:** Tissue, lymph node aspirates, liver biopsy, sternal or iliac crest bone marrow.
Volume/Amount Required: small piece of tissue	**Preferred Specimen:** Tissue
Collection/Preservation: Specimens may be collected from the margin of the lesion by aspiration, scraping, or punch biopsy. If material is to be cultured, it must be collected aseptically.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Insufficient specimen, Name on specimen/form do not match.	**Sample Container:** Sterile, leak-proof container.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Specimens examined by TDSHS follow up cultures will be forwarded by TDSHS to CDC with prior arrangement.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87177	**Fees:**

Leprosy (Microscopic and Animal Studies)

Names of Related Agents: Mycobacterium leprae

Test Includes:	
Reporting	
Results Available:	**Contact #s:** Hansen's Disease Program Coordinator at 512-458-7447
Reference	
Method:	
Turnaround Time:	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Tissue; Skin Scrapings; Slides smeared with exudates
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Skin scrapings, smears, and biopsy material go to: National Hansen's Disease Programs/Clinical Lab, Baton Rouge, Louisiana. For more information telephone 1-800-642-2477.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: As directed per case	**Shipping Requirements:**
Billing	
CPT Code: 87206	**Fees:**

Leptospirosis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Sera are sent to the CDC. Specimens positive in the Indirect Hemagglutination Test, qualitative screening test, are confirmed with a quantitative Microagglutination Test against a battery of antigens. A fourfold increase in titer is evidence of current infection. Extensive cross-reactions among leptospiral antigens are frequent.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86720	**Fees:**

Listeriosis Culture–(Isolation)

Test Includes: Conventional biochemicals.	
Reporting	
Results Available: 7-21 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals.	
Turnaround Time: 7-21 days	**Reference Range:** No *Listeria monocytogenes* isolated
Limitations: Organism must be viable in order to culture.	**Interpretation:** Isolation of *Listeria monocytogenes* should always be considered significant.
Specimen Requirements	
Specimen Collection: Venipuncture.	**Sample Type:** Blood; Tissue.
Volume/Amount Required: 10 mL of whole blood, small piece tissue	**Preferred Specimen:** Blood; Tissue
Collection/Preservation: Blood may be kept at ambient temperature or refrigerated. Do not freeze whole blood. Refrigerate tissue.	**Storage Instructions:** Do not freeze whole blood. Blood may be kept at ambient temperature or refrigerated. Refrigerate tissue.
Causes for Rejection: No identifying marks on sample and/or paperwork.	**Sample Container:** Tiger or red top vacutainer, sterile leak-proof container.
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: See Aerobic Bacterial Culture (Isolation).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: Tissue 2-8 ° C; Blood 2-25° C	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87046	**Fees:**

Listeriosis Culture –(Identification)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 4-21 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals	
Turnaround Time: 4-21 days	**Reference Range:** By report
Limitations: Organism must be viable for culture studies.	**Interpretation:** Identification of *Listeria monocytogenes* should always be considered significant.
Specimen Requirements	
Specimen Collection: Dependent upon source of sample.	**Sample Type:** Pure culture.
Volume/Amount Required: one specimen per patient.	**Preferred Specimen:** Pure culture on agar slant.
Collection/Preservation: May be kept at ambient temperature.	**Storage Instructions:** Store at ambient temperature.
Causes for Rejection: No identifying marks on sample and/or paperwork.	**Sample Container:** Dependent upon type of transport.
Sample Test Kit:	**Availability:** Tested Monday – Friday.
Diagnostic Information: See Aerobic Bacterial Culture, (Identification)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, Biosafety level 2.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Listeriosis Culture (Typing)

Test Includes: Isolates from outbreaks are sent to the CDC for typing.	
Reporting	
Results Available: Dependent on CDC report	**Contact #s:** (512) 458-7185
Reference	
Method: Serotyping, PFGE	
Turnaround Time: Dependent on CDC report	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure cultures
Volume/Amount Required:	**Preferred Specimen:** Pure cultures.
Collection/Preservation:	**Storage Instructions:** Ambient temperature
Causes for Rejection: Insufficient information, Name on tube/form do not match.	**Sample Container:** Agar slant in screw cap tube.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Isolates from outbreaks are sent to the CDC for typing. Molecular typing performed at TDH Request molecular typing by indicating PFGE on submission form Request serotyping on submission form and include clinical history to be forwarded to the CDC.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, Biosafety level 2
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87147	**Fees:**

Loiasis (Microscopic – Direct Giemsa Stains)

Test Includes: Microscopic examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 24 hours	**Reference Range:** No parasites found.
Limitations:	**Interpretation:** No parasite found indicates that there were no visible parasites in the specimen submitted.
Specimen Requirements	
Specimen Collection: venipuncture	**Sample Type:** Blood
Volume/Amount Required: 20 mL whole blood	**Preferred Specimen:** Blood Purple Top collected between 10 am and 2 pm.
Collection/Preservation: Collect blood by venipuncture, preferably between 10 am and 2 pm, in a purple top vacutainer tube.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Incorrect collection tube, insufficient sample	**Sample Container:** Purple top vacutainer
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: 2 thin and 2 thick smears should be examined.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87177	**Fees:**

Lobomycosis (Culture - Isolation)

Test Includes: Tissues are forwarded to the CDC for fluorescence.	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: biopsy	**Sample Type:**
Volume/Amount Required: small piece of tissue	**Preferred Specimen:** Isolate; Tissue
Collection/Preservation: ambient temperature	**Storage Instructions:** ambient temperature
Causes for Rejection:	**Sample Container:** Sterile, leak-proof container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Tissues are forwarded to the CDC for fluorescence.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Handle body fluids using universal precautions
Transport Temperature:	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87102	**Fees:**

Lobomycosis (Culture - Identification)

Test Includes: Tissues are forwarded to the CDC for fluorescence.	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: biopsy	**Sample Type:** Isolate; Tissue
Volume/Amount Required: small piece of tissue	**Preferred Specimen:** Isolate; Tissue
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Sterile, leak-proof container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Tissues are forwarded to the CDC for fluorescence.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Handle body fluids using universal precautions
Transport Temperature: ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87102	**Fees:**

Lobomycosis (Microscopic – Direct Fluorescent Antibody)

Test Includes: Tissues are forwarded to the CDC for fluorescence	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Tissue
Volume/Amount Required:	**Preferred Specimen:** Tissue
Collection/Preservation:	**Storage Instructions:** Ambient Temperature
Causes for Rejection:	**Sample Container:** Sterile, leak-proof container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Tissues are forwarded to the CDC for fluorescence	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Handle body fluids using universal precautions
Transport Temperature:	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87206	**Fees:**

Lyme Disease (Serological – Enzyme Immunoassay)

Reporting	
Results Available:	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 3-5 days	**Reference Range:** <1.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: Samples that will be delivered to the laboratory within 8 hours of collection may be transported at room temperature in the original blood collection tube. If the samples are going to be shipped and will be delivered to the laboratory within 48 hours of collection, sera must be separated from the blood and shipped on cold packs, between 2° and 8°C. If the serum samples will not be delivered to the laboratory within 48 hours of collection at these temperatures, then the samples must be frozen at -20°C or lower and shipped on dry ice.	**Storage Instructions:** Separated serum may be held at 2-8°C, or frozen at -20°C.
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, specimens received with extended transit time, or received at incorrect temperature.	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test run every Tuesday and Thursday
Diagnostic Information: The Borrelia burgdorferi antibody EIA detects both IgG and IgM antibodies. IgM-specific titers usually peak 4 to six weeks after the onset of infection and may persis in the presence of disease. IgG levels tend to rise above background levels about 2-3 weeks after infection and may remain elevated in cases of prolonged disease. Seronegative cases of Lyme Disease have been reported. Serum from patients with other spirochetal diseases, mononucleosis, and some autoimmune diseases may give false positive results. Since elimination of cross-reactive syphilitic serum from syphilis patients, increases the test specificity to 97%, all lyme reactive specimens are tested for the presence of regains and treponemal specific antibodies. Patients with early lyme disease	

may have undetectable antibody levels. Treatment with antibiotics early after onset of ECM can also prevent development of antibodies. Test is run twice per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86618	**Fees:**

Lymphocytic Choriomeningitis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture, Spinal Tap	**Sample Type:** Serum, CSF
Volume/Amount Required: 10 mL whole blood, 1.0 mL CSF	**Preferred Specimen:** Paired Sera; Spinal Fluid
Collection/Preservation: Red top or tiger top tube, sterile collection tube for CSF	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C. Immediately freeze CSF.
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Sera or CSF are forwarded to the CDC.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86790	**Fees:**

Malaria (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: If blood films are negative but evidence for malaria is strong then serum is sent to the CDC. Serology is by prior arrangement only, (512) 458-7760. Once cleared, serum specimens are sent to the CDC. Antibody may persist for years, so that an elevated titer cannot be used as evidence for current infection. Emphasis is placed on blood films. A detailed patient history is required.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86750	**Fees:**

Malaria (Microscopic – Direct Stain Giemsa)

Test Includes: Microscopic examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 24 hours	**Reference Range:** No parasites found
Limitations: Anticoagulants such as EDTA in venous blood specimens can interfere with parasite morphology and staining characteristics	**Interpretation:** No parasites found indicates that there were no visible parasites in the specimens submitted.
Specimen Requirements	
Specimen Collection: Finger stick or Venipuncture	**Sample Type:** Thick/thin Blood Smears; Blood in Purple top
Volume/Amount Required: 20 mL whole blood	**Preferred Specimen:** Thick/thin Blood Smears; Blood in Purple top
Collection/Preservation: Collect blood by finger stick. If blood is collected by venipuncture in purple top tube, make 2 thick and 2 thin smears on glass slides within one hour of collection.	**Storage Instructions:** ambient temperature
Causes for Rejection: Incorrect blood tube used.	**Sample Container:** Purple top vacutainer
Sample Test Kit:	**Availability:** Monday-Friday With prior approval on Saturday/Sunday
Diagnostic Information: Anticoagulants such as EDTA in venous blood specimens can interfere with parasite morphology and staining characteristics, this can be further compounded by excessive delay prior to making smears. In such cases capillary blood samples are preferable (finger sticks) . If venous blood is used at least 2 thin and 2 thick smears should be made within 1 hour.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87207	**Fees:**

Melioidosis Culture (Isolation) See also Aerobic Bacterial Culture (Isolation)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 7-21 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals	
Turnaround Time: 7-21 days	**Reference Range**: No bacteria isolated.
Limitations:	**Interpretation:** Isolation of *Burholderia pseudomallei* should always be considered significant. It is a select agent and must be reported following guidelines for select agents.
Specimen Requirements	
Specimen Collection: Venipuncture, biopsy, needle aspiration	**Sample Type:** blood, tissue, aspirates
Volume/Amount Required: 20 mL whole blood, small piece of tissue,	**Preferred Specimen:** blood, tissue, aspirates
Collection/Preservation: Standard collection, transport, and storage techniques are sufficient to ensure the recovery of this organism.	**Storage Instructions:** ambient temperature
Causes for Rejection: Incorrect collection tube, name on tube/form does not match; broken in transport.	**Sample Container:** Tiger top or red top vacutainer; sterile, leak-proof container.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: *B. pseudomallei* is the etiologic agent of melioidosis. Mortality in patients with fulminant sepsis approaches 90%, Melioidosis is most prevalent in Southeast Asia and northern Australia. This organism should be considered in any individual with tuberculosis-like disease who has a travel history to a region of endemicity, even if travel preceded the illness by decades.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: Ambient temperature.	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87040	**Fees:**

Melioidosis (Culture – Identification) See also Aerobic Bacterial Culture, (Identification)

Test Includes: Conventional Biochemicals, PCR	
Reporting	
Results Available: PCR 1 day; 4-21 days	**Contact #s:** (512) 458-7582/ 458-7185
Reference	
Method: Conventional biochemicals, PCR	
Turnaround Time: PCR 1 day; PCR 4-21 days	**Reference Range:** Genus and species reported.
Limitations:	**Interpretation:** Identification of *Burkholderia pseudomallei* should always be considered significant. It must be reported following guidelines for a select agent.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: one specimen per patient	**Preferred Specimen:** Pure culture on agar slant
Collection/Preservation: Ambient temperature	**Storage Instructions:** Ambient temperature
Causes for Rejection: Expired transport media, broken or compromised in transport.	**Sample Container:** Agar slant in screw cap tube
Sample Test Kit:	**Availability:** Monday-Friday With prior notification, Saturday-Sunday
Diagnostic Information: *B. pseudomallei* is the etiologic agent of melioidosis. Mortality in patients with fulminant sepsis approaches 90%, Melioidosis is most prevalent in Southeast Asia and northern Australia. This organism should be considered in any individual with tuberculosis-like disease who has a travel history to a region of endemicity, even if travel preceded the illness by decades.	
Specimen Submission	
Required Request Form: G2-B	**Specimen Handling:** Infectious agent, Biosafety level 2
Transport Temperature: Ambient temperature	**Shipping Requirements:** Shipping Requirements: Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Meningitis, Meningococcal Culture (Isolation)

Test Includes: Conventional biochemicals, Serological typing	
Reporting	
Results Available: Preliminary 1day; Final report 5-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional Biochemicals, serotype determined by slide agglutination	
Turnaround Time: 5-10 days	**Reference Range:** No bacteria isolated
Limitations: Specimen should be collected prior to initiation of antibiotic therapy	**Interpretation:**
Specimen Requirements	
Specimen Collection: Venipuncture, Spinal tap	**Sample Type:**
Volume/Amount Required: 10 mL whole blood, 1-2 mL spinal fluid	**Preferred Specimen:** Blood; Spinal Fluid
Collection/Preservation: Collect blood by venipuncture in a red top or tiger top vacutainer. Store at ambient temperature. Inocuation into an aerobic blood culture bottle is also acceptable. Collect CSF by spinal tap. Transport at 2-8° C	**Storage Instructions:** Store at 2-8° C
Causes for Rejection: Incorrect collection tube used.	**Sample Container:** Red or tiger top vacutainer
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: See Aerobic Bacterial Culture (Isolation); Isolation of *N. meningitidis* will be serogrouped and the report will be called within 24 hours of isolation.Molecular typing on isolates at TDSHS upon request.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: 2-8° C	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87070	**Fees:**

Meningitis, Meningococcal Culture (Identification)

Test Includes: Conventional biochemicals, Serological typing	
Reporting	
Results Available: Preliminary 1day; Final report 5-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional Biochemicals, serotype determined by slide agglutination	
Turnaround Time: 5-10 days	**Reference Range:** By report
Limitations: Organism must be viable for culture studies.	**Interpretation:** By report
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: One specimen per patient	**Preferred Specimen:** Pure culture on blood agar
Collection/Preservation: Ambient temperature, CO_2 environment.	**Storage Instructions:** Ambient temperature; Do not refrigerate
Causes for Rejection: Name on tube/form do not match; broken in transport	**Sample Container:**
Sample Test Kit:	**Availability:** Monday-Friday With prior notification: Saturday-Sunday
Diagnostic Information: Pure cultures submitted on Blood Agar slants can be serogrouped upon arrival. Preliminary reports will be called within 24 hours of receipt. See Aerobic Bacterial Culture, (Identification) Molecular typing at TDSHS upon request. Molecular typing is routinely performed on identified outbreak isolates.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, Biosafety level 2.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Meningitis, Meningococcal Culture (Grouping)

Test Includes: slide agglutination	
Reporting	
Results Available: Preliminary 1day; Final report 3-5 days	**Contact #s:** (512) 458-7582
Reference	
Method: slide agglutination	
Turnaround Time: 3-7 days	**Reference Range:** By report
Limitations: Organism must be viable for serological typing.	**Interpretation:** By report
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: one specimen per patient.	**Preferred Specimen:** Pure culture on blood agar
Collection/Preservation: Ambient temperature, CO2 environment.	**Storage Instructions:** ambient temperature, do not refrigerate
Causes for Rejection: name on tube/form do not match; broken in transport	**Sample Container:** Agar slant in screw cap tube
Sample Test Kit:	**Availability:** Monday-Friday With prior notification: Saturday-Sunday
Diagnostic Information: Serogrouping performed on all isolates and referred cultures. Pure cultures submitted on Blood Agar slants can be serogrouped upon arrival. Preliminary reports will be called within 24 hours of receipt.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, biosafety level 2
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Microsporidiosis (Microscopic – Modified Trichrome Stain)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: feces, tissue	**Sample Type:** feces, tissue
Volume/Amount Required: 15 mL liquid stool, 15 g stool	**Preferred Specimen:** Feces; tissue
Collection/Preservation: Collect stool in clean, dry container. Immediately transfer to formalin preservative.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Unpreserved stool > 5 hours old.	**Sample Container:** Formalin transport for parasites
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Feces should be formalin preserved. Other suspect tissue-send tissue or stained slide.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions. Formalin is a poison, handle with care.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87209	**Fees:**

Milk, Quality Check (Culture- SPC)

Test Includes: Standard plate count	
Reporting	
Results Available: 4 days	**Contact #s:** (512) 458-7562
Reference	
Method: Standard plate count	
Turnaround Time: 4 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: Milk	**Sample Type:** Milk
Volume/Amount Required: According to requirements of the State Milk Program	**Preferred Specimen:** Milk
Collection/Preservation: Milk is collected by state health officials	**Storage Instructions:** 0-4.4° C
Causes for Rejection: Temperature control out of range	**Sample Container:** whirlpak or milk container
Sample Test Kit:	**Availability:** With prior notification or as routinely scheduled
Diagnostic Information: Samples are accepted only from state health officials. Prior notification by the collecting authority is required.	
Specimen Submission	
Required Request Form: G-84 or G-21	**Specimen Handling:** According to FDA guidelines
Transport Temperature: 0-4.4° C	**Shipping Requirements:** Leak-proof containers, refrigerated
Billing	
CPT Code: none	**Fees:**

Milk, Quality Check (Inhibitors)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 4 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Milk
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Samples are accepted only from state health officials. Prior notification by the collecting authority is required.	
Specimen Submission	
Required Request Form: G-84 or G-21	**Specimen Handling:** According to FDA Guidelines
Transport Temperature: 0-4.4º C	**Shipping Requirements:** Leak-proof containers, refrigerated
Bi ling	
CPT Code: none	**Fees:**

Milk, Quality Check (Phosphatase)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 4 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Milk
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Samples are accepted only from state health officials. Prior notification by the collecting authority is required.	
Specimen Submission	
Required Request Form: G-84 or G-21	**Specimen Handling:** According to FDA Guidelines
Transport Temperature: 0-4.4º C	**Shipping Requirements:** Leak-proof containers, refrigerated
Billing	
CPT Code: none	**Fees:**

Milk, Quality Check (Coliforms)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 4 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Milk
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Samples are accepted only from state health officials. Prior notification by the collecting authority is required.	
Specimen Submission	
Required Request Form: G-84 or G-21	**Specimen Handling:** According to FDA Guidelines
Transport Temperature: 0-4.4º C	**Shipping Requirements:** Leak-proof containers, refrigerated
Billing	
CPT Code: none	**Fees:**

Milk, Quality Check (Added Water)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 4 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Milk
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Samples are accepted only from state health officials. Prior notification by the collecting authority is required.	
Specimen Submission	
Required Request Form: G-84 or G-21	**Specimen Handling:** According to FDA guidelines
Transport Temperature: 0-4.4º C	**Shipping Requirements:** Leak-proof containers, refrigerated.
Billing	
CPT Code: none	**Fees:**

Milk, Quality Check (Aflatoxin)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 4 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Milk
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Samples are accepted only from state health officials. Prior notification by the collecting authority is required.	
Specimen Submission	
Required Request Form: G-84 or G-21	**Specimen Handling:** According to FDA guidelines
Transport Temperature: 0-4.4º C	**Shipping Requirements:** Leak-proof containers, refrigerated.
Billing	
CPT Code: none	**Fees:**

Milk, Quality Check (Somatic cell counts)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 4 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Milk
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Samples are accepted only from state health officials. Prior notification by the collecting authority is required.	
Specimen Submission	
Required Request Form: G-84 or G-21	**Specimen Handling:** According to FDA guidelines
Transport Temperature: 0-4.4º C	**Shipping Requirements:** Leak-proof containers, refrigerated.
Billing	
CPT Code: none	**Fees:**

Milk, Quality Check (Pathogens)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 14 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Milk
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Samples are accepted only from state health officials. Prior notification by the collecting authority is required.	
Specimen Submission	
Required Request Form: G-84 or G-21	**Specimen Handling:** According to FDA guidelines
Transport Temperature: 0-4.4º C	**Shipping Requirements:** Leak-proof containers, refrigerated.
Billing	
CPT Code: none	**Fees:**

Molecular typing (PFGE)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 14 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure culture, safely contained
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Cultures for testing are accepted with prior notification, please call (512) 458-7214. PFGE testing is a useful tool for determining strain relateness and possible l outbreaks or nosocomial outbreaks. At least two isolates from different individuals must be submitted in a suspected outbreak. As part of the PulseNet program, all E. coli O157:H7 and Listeria , selected Salmonella, Shigella, and Campylobacter, and Vibrio, Yersinia are molecularly typed. The patterns are posted to the National PulseNet Database allowing for identification of outbreaks that may not be regionally contained.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code: 87152	**Fees:**

Mosquitoes (Identification only)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** 512-458-7615
Reference	
Method:	
Turnaround Time: 3-5 days	**Reference Range:** By report.
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Live Mosquitoes
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Mosquitoes are accepted only from health officials who have been trained in the Texas Department of State Health Services state surveillance program.	
Specimen Submission	
Required Request Form: G-14	**Specimen Handling:**
Transport Temperature: Wet Ice (Cold packs)	**Shipping Requirements:**
Billing	
CPT Code: none	**Fees:**

Mosquitoes (Culture – Virus Isolation/Detection and Identification)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** 512-458-7615
Reference	
Method:	
Turnaround Time: 5-14 days	**Reference Range:** No arbovirus isolated.
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Live Mosquitoes
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Mosquitoes are accepted only from health officials who have been trained in the Texas Department of State Health Services state surveillance program. Specimens are tested for the presence of arboviruses using cell cultures for isolation.	
Specimen Submission	
Required Request Form: G-14	**Specimen Handling:**
Transport Temperature: Wet Ice (Cold Packs)	**Shipping Requirements:**
Billing	
CPT Code: none	**Fees:**

Mosquitoes, Larvae (Microscopic -Identificiation)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** 512-458-7615
Reference	
Method:	
Turnaround Time: 4-6 days	**Reference Range:** By report.
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Larvae in alcohol
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Mosquitoes are accepted only from health officials who have been trained in the Texas Department of State Health Services state surveillance program.	
Specimen Submission	
Required Request Form: G-14	**Specimen Handling:**
Transport Temperature: Room temperature.	**Shipping Requirements:**
Billing	
CPT Code: none	**Fees:**

Mumps (Culture - Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-458-7594
Reference	
Method: Cell Culture	
Turnaround Time: 2-14 days	**Reference Range:** No virus isolated
Limitations:	**Interpretation:** A result of "No virus isolated" does not necessarily mean absence of a viral agent. The success of virus isolation depends a great deal on the submission of the proper specimen, collected at the right time, adequately maintained, and shipped with the least possible delay.
Specimen Requirements	
Specimen Collection: Specimens should be collected at an appropriate anatomic site and at the proper time after infection because viruses are generally shed for only a short period of time. Refer to Specimen Collection by Type table for additional instructions.	**Sample Type:** See preferred specimen.
Volume/Amount Required: 2-5 mL of CSF, 10-20 mL of urine, or saliva collected with swab in 2-3 mL of viral transport media.	**Preferred Specimen:** CSF; Urine; Saliva
Collection/Preservation: Viral transport media.	**Storage Instructions:** Arriving < 3-4 days after collection, store and send at 2-8° C. Arriving > 3-4 days after collection, store and send at -70° C.
Causes for Rejection: Specimens submitted on preservative such as formalin.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Specimens are inoculated onto a variety of cell cultures. If characteristic CPE or hemadsorption is observed, confirmation of identification will be performed.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Arriving <3-4 days: 2-8 °C (refrigerated) Arriving >3-4 days: ship on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252	**Fees:**

Mumps (Culture - Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 2-14 days	**Contact #s:**512-458-7594
Reference	
Method: Immunofluorescence	
Turnaround Time: 2-14 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: Fill monolayer tube with media if transporting at ambient temperature. If transporting on dry ice, send 1-2 mL.	**Preferred Specimen:** Cell culture isolate with CPE.
Collection/Preservation:	**Storage Instructions:** If shipment of isolate will be delayed, store at -70° C.
Causes for Rejection:	**Sample Container:** Cell culture tube or sterile cryovial.
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Identification based on immunofluorescence test using mumps-specific monoclonal antibody.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Monolayer with CPE: Ambient temperature. Frozen isolate: on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87253	**Fees:**

Mumps (Serological – Enzyme Immunoassay for IgG)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 5-7 days	**Reference Range:** Nonreactive
Limitations: May not detect a recent immunization or infection, or immune status in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: Samples that will be delivered to the laboratory within 8 hours of collection may be transported at room temperature in the original blood collection tube. If the samples are going to be shipped and will be delivered to the laboratory within 48 hours of collection, sera must be separated from the blood and shipped on cold packs, between 2° and 8°C. If the serum samples will not be delivered to the laboratory within 48 hours of collection at these temperatures, then the samples must be frozen at -20°C or lower and shipped on dry ice.	**Storage Instructions:** Separated serum may be held at 2-8°C, or frozen at -20°C.
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, specimens received with extended transit time, or received at incorrect temperature.	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test is performed once per week
Diagnostic Information: Acute and convalescent serum specimens are to be collected 14 days apart. A significant EIA antibody rise is evidence of current or previous infection. Test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions

Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86735	**Fees:**

Mumps (Serological –Immunofluorescence assay for IgM)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 3-5 days	**Reference Range:** <1:10 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: Samples that will be delivered to the laboratory within 8 hours of collection may be transported at room temperature in the original blood collection tube. If the samples are going to be shipped and will be delivered to the laboratory within 48 hours of collection, sera must be separated from the blood and shipped on cold packs, between 2° and 8°C. If the serum samples will not be delivered to the laboratory within 48 hours of collection at these temperatures, then the samples must be frozen at -20°C or lower and shipped on dry ice. * Testing must be completed within one week of the date of collection.	**Storage Instructions:** Separated serum may be held at 2-8°C, or frozen at -20°C.
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test is performed twice per week.
Diagnostic Information: The IFA for the serodiagnosis of mumps measures IgM antibodies specific for mumps virus. An IgM titer of 1:10 or greater is suggestive of recent or current mumps virus infection. Test is performed twice per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions

Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86735	**Fees:**

Mycobacteriosis (Culture - Isolation)

Test Includes: Isolation of mycobacteria and identification to species level.	
Reporting	
Results Available: Positive cultures 14-21 days or earlier; Negative cultures 43 days	**Contact #s:** 512-458-7586 or 512-458-7318 ext 2687
Reference	
Method: Primary identification test is mycolic acid analysis by high performance liquid chromatography	
Turnaround Time: Negatives held six weeks	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Sputum; Tissue; Exudate; Urine; Stool; Blood; Body Fluids
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen unless blood.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline. Gastric specimens must be neutralized prior to transport. Refrigerated blood specimens will be rejected.	**Sample Container:** Triple contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL sterile saline to tissue if needed to maintain moisture during transport. If blood, must collect in Yellow-top vacutainer with SPS.
Sample Test Kit:	**Availability:** Tested 5/days: Monday-Friday
Diagnostic Information: Primary diagnostic specimens and isolates go to TDSHS Laboratory in Austin. Direct HPLC (presumptive identification only) performed on positive AFB smear initial diagnostic specimens. Nucleic acid amplification testing for M. tuberculosis complex may be performed on positive AFB smear initial pulmonary specimens if Direct HPLC testing is inconclusive. For more information telephone 512-458-7342	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87116	**Fees:**

Mycobacteriosis (Culture - Identification)

Test Includes: Identification of isolate by mycolic acid analysis; biochemical testing and/or Accuprobe culture confirmation test performed as adjunct tests if necessary	
Reporting	
Results Available: 2-25 days	**Contact #s:** 512-458-7586
Reference	
Method: Primary identification test is mycolic acid analysis by high performance liquid chromatography.	
Turnaround Time: 2-25 days M. tuberculosis complex reports are telephoned to the submitter on previously undiagnosed patients.	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative.	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained
Sample Test Kit:	**Availability:**
Diagnostic Information: Pure culture isolates submitted to this Laboratory for definitive identification and drug susceptibilities. Molecular typing performed at regional center upon request. Definitive identification performed on positive isolates by HPLC or a combination of HPLC and biochemical testing or HPLC and genetic probe confirmation. For more information telephone 512-458-7342	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87118	**Fees:**

Mycobacteriosis (Culture – Susceptibility, Primary Drug Panel)

Test Includes: Drug Susceptibility Testing of Mycobacterium by Indirect Drug Susceptibility Test	
Reporting	
Results Available: 10 days	**Contact #s:** 512-458-7586
Reference	
Method: BACTEC indirect drug susceptibility test system for M. tuberculosis complex. Agar proportion indirect drug susceptibility test system for M. kansasii	
Turnaround Time: 10-28 days (28 days for confirmation of resistance). Reports of drug resistance are telephoned to the submitter.	**Reference Range:** Susceptible
Limitations: Test can only be performed on pure cultures of mycobacteria.	**Interpretation:** Report states isolate is either susceptible or resistant to a specific drug at critical concentrations recommended by NCCLS.
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture or Isolate
Collection/Preservation: No preservative.	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained.
Sample Test Kit:	**Availability:** Test is set up 5 days/week: Monday – Friday. Test is run 7 days/week.
Diagnostic Information: Pure culture isolates of M. tuberculosis complex or M. kansasii submitted to this Laboratory for drug susceptibilities. Isolates submitted for drug susceptibilities will be identified by this Laboratory. No fee will be charged for the identification test unless the AFB ID test is requested on form G-2B. Primary Panel for M. tuberculosis complex consists of Isoniazid, Ethambutol, or Rifampin testing by BACTEC susceptibility testing. Resistance to any of these drugs is confirmed by agar proportion method. If resistance to any of these drugs is detected, the Secondary Susceptibility Panel is performed. Primary Panel for M. kansasii consists of Rifampin testing by agar proportion method. For drug susceptibility testing of other Mycobacterium species, please telephone 512-458-7342. Pure cultures of other Mycobacterium species may be forwarded by TDSHS laboratory to other reference laboratories for susceptibility testing. A handling fee may be charged. Testing at other reference laboratories is subject to fees charged by those laboratories.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87188	**Fees:**

Mycobacteriosis (Culture – Susceptibility, Secondary Drug Panel)

Test Includes: Drug Susceptibility Testing of Mycobacterium by Indirect Drug Susceptibility Test	
Reporting	
Results Available: 10-28 days	**Contact #s:** 512-458-7586
Reference	
Method: BACTEC indirect drug susceptibility test system for M. tuberculosis complex. Agar proportion indirect drug susceptibility test system for confirmation of drug resistance.	
Turnaround Time: 10-28 days. Reports of drug resistance are telephoned to the submitter.	**Reference Range:** Susceptible
Limitations: Testing can only be performed on pure cultures of Mycobacterium tuberculosis complex.	**Interpretation:** Report states isolate is either susceptible or resistant to a specific drug at critical concentrations recommended by NCCLS.
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative.	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained
Sample Test Kit:	**Availability:** Test is set up 5 days/week: Monday-Friday. Test is run 7 days/week.
Diagnostic Information: Pure culture isolates of M. tuberculosis complex submitted or isolated at this Laboratory for drug susceptibilities. Isolates submitted for drug susceptibilities will be identified by this Laboratory. No fee will be charged for the identification test unless the AFB ID test is requested on form G-2B. Secondary Panel for M. tuberculosis complex consists of Streptomycin, Ethionamide, Kanamycin, Pyrazinamide, and Ofloxacin by BACTEC susceptibility testing. Resistance to any of these drugs is confirmed by the agar proportion method. Capreomycin is available by agar proportion method only. For drug susceptibility testing of other Mycobacterium species, please telephone 512-458-7342. Pure cultures of other Mycobacterium species may be forwarded by TDSHS laboratory to other reference laboratories for susceptibility testing. A handling fee may be charged. Testing at other reference laboratories is subject to fees charge by those laboratories.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87190	**Fees:**

Mycobacteriosis (Culture – Susceptibility, Pyrazinamide Only)

Test Includes: Drug susceptibility testing of Mycobacterium tuberculosis complex to pyrazinamide.	
Reporting	
Results Available: 7-28 days	**Contact #s:** 512-458-7586
Reference	
Method: BACTEC indirect drug susceptibility test system	
Turnaround Time: 7-28 days Reports of drug resistance are telephoned to the submitter.	**Reference Range:** By report
Limitations: Test can only be performed on pure cultures of M. tuberculosis complex	**Interpretation:** Report states that the isolate is either susceptible or resistant to pyrazinamide at critical concentration recommended by NCCLS.
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative.	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained.
Sample Test Kit:	**Availability:** Test is set up 5 days/week: Monday-Friday. Test is run 7 days/week.
Diagnostic Information: Pure culture isolates of M. tuberculosis complex submitted or isolated at this Laboratory for drug susceptibilities. Isolates submitted for drug susceptibilities will be identified by this Laboratory. No fee will be charged for the identification test unless the AFB ID test is requested on form G-2B. Pyrazinamide testing is performed by BACTEC susceptibility testing.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87190	**Fees:**

Mycobacteriosis (Culture – Isolation - Direct M tuberculosis Genetic Probe)

Test Includes: Nucleic Acid Amplification Testing of Clinical Specimens by MTD Test	
Reporting	
Results Available: 2-5 days	**Contact #s:** 512-458-7586
Reference	
Method: Gen-Probe MTD Test; test amplifies and detects ribosomal RNA of M. tuberculosis complex	
Turnaround Time: 2-5 days Positive reports are telephoned to the submitter.	**Reference Range:** By Report
Limitations: Specimens that have been in transit > 6 days from the date of collection are not acceptable. Test can only be run on undiagnosed, untreated patients on processed non-bloody pulmonary specimens. A negative test does not mean the patient does not have M. tuberculosis disease. All tests must be confirmed by culture of specimen for the presence of mycobacteria.	**Interpretation:** A Positive MTD test means that the probe detected ribosomal RNA of the M. tuberculosis complex in the clinical specimen.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical pulmonary specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Sputum; Bronchial Washings Specimen can not be bloody.
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. Specimen must be shipped cold.
Causes for Rejection: Specimens that have been in transit > 6 days from date of collection are not acceptable. Specimens received frozen, in formalin, or in culture medium will be rejected. Specimens from treated and diagnosed patients will be rejected for MTD analysis.	**Sample Container:** Triple contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container.
Availability: MTD by special request. Please telephone 512-458-7342.	
Diagnostic Information: Primary diagnostic specimens and isolates go to TDSHS Laboratory in Austin. Nucleic acid amplification testing for M tuberculosis complex on positive AFB smear primary pulmonary diagnostic specimens only.	
Specimen Submission	
Required Request Form: G-2B **Transport Temperature:** Ship cold.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87550	**Fees:**

Mycobacteriosis (Microscopic – Truant's Stain)

Test Includes: Microscopic Examination of Clinical Specimen for Acid Fast Bacilli (AFB)	
Reporting	
Results Available: 1 day. Positive reports telephoned to submitter within 2 hrs of availability.	**Contact #s:** 512-458-7586
Reference	
Method: Truant's Acid Fast Stain	
Turnaround Time: 24 hours	**Reference Range:** Negative
Limitations: A negative microscopic examination does not mean that the patient's specimen cannot be culture positive for AFB. This test is less sensitive than culture. The stain utilizes a fluorescent dye that can be taken up by the mycobacterium to different degrees depending on the species or if the patient is on antibiotic treatment. The quality of the specimen has major impact on the results of the microscopic examination.	**Interpretation:** The report states whether the test is Negative if No AFB are Seen or Positive if AFB are Seen on microscopic examination. If Positive, the report provides a quantitation to indicate how many AFB were seen in a high power field under the microscope. Occasionally, an examination will result in the observation of only one or two AFB in the entire test. This number of AFB (one or two) is reported but is not considered a positive result by CDC or the American Thoracic Society.
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Sputum; Tissue; Exudate; Stool; Blood; Body Fluids; Urine
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen, unless blood. This is important if the specimen is also to be cultured.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline. If swabs are submitted in transport medium, the test cannot be performed.	**Sample Container:** Triple contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL of sterile saline to tissue if needed to maintain moisture during transport. If blood, must collect in Yellow-top vacutainer with SPS.
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday-Friday
Diagnostic Information: Primary diagnostic specimens and isolates go to TDSHS Lab in Austin.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87206	**Fees:**

Mycetoma (Culture – Isolation)

Test Includes: Isolation of fungus and identification by morphological tests.	
Reporting	
Results Available: 21-28 days	**Contact #:** 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Slide culture	
Turnaround Time: 21-28 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required:	**Preferred Specimen:** Tissue; Exudate
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add no more than 10 mL sterile saline to tissue if needed to maintain moisture during transport.
Sample Test Kit:	**Availability:** Testing available upon approval of Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87102	**Fees:**

Mycetoma (Culture – Identification)

Test Includes: Identification of fungus by morphological tests	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-458-7586
Reference	
Method: Slide Culture	
Turnaround Time: 21-28 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative.	**Storage Instructions:**
Causes for Rejection: Culture infested with mites.	**Sample Container:** Triple-contained.
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday-Friday
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87102	**Fees:**

Mycoplasmosis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** <1:8 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Single serum; Paired sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Previous notification is requested (458-7760). A detailed patient history is required. Single titers of >1:64 are indicative of recent infection. Titers of 1:8 to 1:32 may be indicative of either past or present infection. A four-fold or greater increase in titer between acute and convalescent specimens confirms the diagnosis.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86738	**Fees:**

Naegleria fowleri (Identification and Culture) See also primary amebic meningoencephalitis (PAM)

Test Includes: Culture, microscopic examination	
Reporting	
Results Available: 3-10 days	**Contact #s:** (512) 458-7560
Reference	
Method: culture, microscopic examination	
Turnaround Time: 3-10 days	**Reference Range:** No parasites found
Limitations: organism must be viable	**Interpretation:** No parasites found indicates that there were no visible parasites or viable parasites consistent with *Naegleria* detected in the specimen.
Specimen Requirements	
Specimen Collection: CSF, tissue	**Sample Type:** CSF, tissue, corneal scrapings
Volume/Amount Required: 1-2 mL CSF, small piece of tissue	**Preferred Specimen:** CSF, tissue, corneal scrapings
Collection/Preservation: Obtain the tissue or corneal scrapings aseptically. CSF is collected by spinal tap. Keep specimens at ambient temperature.	**Storage Instructions:** Ambient temperature, never frozen. May be maintained at 4° C for < 24 hours.
Causes for Rejection: Insufficient specimen; frozen tissue.	**Sample Container:** sterile, leak-proof container
Sample Test Kit:	**Availability:** Monday-Friday With prior notification: Saturday.
Diagnostic Information: See primary amebic meningoencephalitis (PAM)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Shipping Requirements: Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87177	**Fees:**

Nocardiosis (Culture - Isolation)

Test Includes: Isolation of Nocardia species; Identification by biochemical and physiological tests to species level.	
Reporting	
Results Available: 28-35 days	**Contact #s:** 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Various biochemical and physiological tests for identification to species.	
Turnaround Time: 28 days	**Reference Range:** Negative
Limitations: Certain species of Nocardia can only be identified fully with molecular analysis not available at TDSHS laboratory.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Tissue; Exudate; Sputum; Blood; Body Fluids; Spinal Fluid
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen, unless blood.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline. Blood specimens less than 5 mL are unacceptable. Refrigerated blood specimens will be rejected.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL sterile saline to tissue if needed to maintain moisture during transport. If blood, prefer yellow-top with ACD; may also contain SPS. Green-top is acceptable with lithium or heparin.
Sample Test Kit:	**Availability:** Testing available upon approval of Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87070	**Fees:**

Nocardiosis (Culture - Identification)

Test Includes: Various biochemical and physiological tests for identification to species level.	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-458-7586
Reference	
Method: Biochemical and physiological testing for identification	
Turnaround Time: 21-28 days	**Reference Range:** By report
Limitations: Certain species of Nocardia can only be identified fully with molecular analysis not available at TDSHS laboratory.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative.	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained
Sample Test Kit:	**Availability:** Test run 5 days/week: Monday-Friday
Diagnostic Information: Pure cultures submitted to this Laboratory for definitive identifications. Drug susceptibility testing on these organisms not available at TDSHS. Isolates may be forwarded by TDSHS laboratory to other reference laboratories for susceptibility testing. A handling fee may be charged. Testing at other reference laboratories is subject to fees charged by those laboratories.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87077	**Fees:**

Nosocomial Infections

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 7-21 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure cultures safely contained.
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Molecular epidemiology techniques available for hospital and similar institutional outbreaks. Contact Laboratory for collection and shipping instructions. Environmental specimens from infection control programs are not accepted.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code:	**Fees:**

Paracoccidioidomycosis (Culture - Isolation)

Test Includes: Isolation of fungus and identification by morphological and physiological tests	
Reporting	
Results Available: 28-35 days	**Contact #s:** 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Slide culture; conversion at 37°C	
Turnaround Time: 28 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Tissue; Sputum
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL sterile saline to tissue if needed to maintain moisture during transport.
Sample Test Kit:	**Availability:** Testing available upon approval by Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87101, 87102, 87103	**Fees:**

Paracoccidioidomycosis (Culture - Identification)

Test Includes: Identification of fungus by morphological and physiological tests	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-458-7586
Reference	
Method: Slide Culture; conversion at 37° C	
Turnaround Time: 21-28 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection: Culture infested with mites	**Sample Container:** Triple-contained
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday-Friday
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87101, 87102, 87103	**Fees:**

Paracoccidioidomycosis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum is sent to the CDC. CF titer parallels severity. Cross-reactions do occur. Precipitin bands denote past or present disease.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86671	**Fees:**

Paragonimiasis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available: 3 weeks	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 10 mL whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum is sent to the CDC.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86682	**Fees:**

Paragonimiasis (Microscopic – Direct Wet Smears Concentration)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 days	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Feces
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Fecal specimens must be sent in formalin. Adult flukes must be sent in ethyl alcohol. Referred material accepted from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code: 87210	**Fees:**

Parainfluenza (Culture – Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 5-14 days	**Contact #s:** 512-458-7594
Reference	
Method: Cell Culture	
Turnaround Time: 5-14 days	**Reference Range:** No virus isolated
Limitations:	**Interpretation:** A result of "No virus isolated" does not necessarily mean absence of a viral agent. The success of virus isolation depends a great deal on the submission of the proper specimen, collected at the right time, adequately maintained, and shipped with the least possible delay.
Specimen Requirements	
Specimen Collection: Specimens should be collected at an appropriate anatomic site and at the proper time after infection because viruses are generally shed for only a short period of time. Refer to Specimen Collection by Type table for additional instructions.	**Sample Type:** See preferred specimen.
Volume/Amount Required: Swabs in 2-4 mL of viral transport media.	**Preferred Specimen:** Throat Swab; Nasopharyngeal Secretions
Collection/Preservation: Viral transport media.	**Storage Instructions:** Arriving < 3-4 days after collection, store and send at 2-8° C. Arriving > 3-4 days after collection, store and send at -70° C.
Causes for Rejection: Specimens submitted on a preservative such as formalin.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Specimens are inoculated onto a variety of cell culture monolayers. If characteristic CPE or hemadsorption is observed, confirmation of identification will be performed.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Arriving <3-4 days: 2-8°C Arriving >3-4 days: send on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252	**Fees:**

Parainfluenza (Culture – Typing)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 5-14 days	**Contact #s:** 512-458-7594
Reference	
Method: Immunofluorescence	
Turnaround Time: 5-14 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: Fill monolayer tube with media if transporting at ambient temperature. If transporting on dry ice, send 1-2 mL.	**Preferred Specimen:** Cell culture isolate with CPE.
Collection/Preservation:	**Storage Instructions:** If shipment of isolate will be delayed, store at -70° C.
Causes for Rejection:	**Sample Container:** Cell culture tube or sterile cryovial.
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Typing of clinical isolates is based on immunofluorescence tests using monoclonal antibodies to parainfluenza 1, 2, 3, and 4.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Monolayer with CPE: ambient temperature. Frozen isolate: on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87253	**Fees:**

PCR - Virulence Factors (Detection)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 7-11 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture, safely contained
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: PCR is performed at TDSHS for the virulence factor genes for detection of pathogenic Escherichia coli including heat stable and labile toxin, shiga toxin, invasion plasmid antigen, attaching and effacing gene and hemolysin. PCR may be performed from pure cultures or from original plating media used in stool screens. For typing see Escherichia coli 0157:H7 or other Shiga toxin E. coli Culture (Typing) For toxin testing see Escherichia coli 0157:H7 or other Shiga toxin E. coli (Toxin Testing).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code:	**Fees:**

Penicilliosis (Culture - Isolation)

Test Includes: Isolation of fungus and identification by morphological tests	
Reporting	
Results Available: 14-21 days	**Contact #s:** 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Slide culture	
Turnaround Time: 14-21 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Tissue; Sputum; Exudate
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL sterile saline to tissue if needed to maintain moisture during transport.
Sample Test Kit:	**Availability:** Testing available upon approval by Dr. Penfield
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87101, 87102, 87103	**Fees:**

Penicilliosis (Culture - Identification)

Test Includes: Identification of fungus by morphological tests	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-458-7586
Reference	
Method: Slide Culture	
Turnaround Time: 7-10 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday-Friday
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87101, 87102, 87103	**Fees:**

Pertussis Culture (Identification)

Test Includes: Conventional Biochemicals, PCR	
Reporting	
Results Available: Preliminary	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals, PCR	
Turnaround Time: 5-7 days	**Reference Range:** No *B. pertussis* isolated.
Limitations: *B. pertussis* has special growth requirements. Culture must be transported on appropriate media that supports growth.	**Interpretation:** Negative culture results indicate that there were no viable organisms consistent with *B. pertussis* in the specimen.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: One specimen per patient	**Preferred Specimen:** Pure culture on appropriate media
Collection/Preservation:	**Storage Instructions:** Ambient temperature
Causes for Rejection: Name on tube/form do not match; broken in transport	**Sample Container:** Agar slant or deep in screw cap tube
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Submit suspected B. pertussis isolates on appropriate media such as Bordet-Gengou, Regan-Lowe, or BCYE agar. Positive PCR results will be called within 1 day of receipt. Please insure that telephone number and contact name is on submission form.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, Biosafety level 2.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Pinworm See also Enterobiasis

Test Includes: Microscopic Examination	
Reporting	
Results Available: 3 days	**Contact #s**: (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 3 days	**Reference Range**: No pinworm eggs found
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: pinworm prep kits; taped slides	**Sample Type**: Pinworm prep kits, taped slides
Volume/Amount Required: 1 slide/kit per patient	**Preferred Specimen:** Pinworm prep kits, taped slides
Collection/Preservation: Using strip of clear cellulose tape sticky side outward on a microscope slide, press firmy against the perianal folds. The tape is then spread back over the slide adhesive side down. Ship in slide carrier. If using pinworm prep kit, following instructions given in kit.	**Storage Instructions**: ambient temperature
Causes for Rejection: Frosted tape used;	**Sample Container**: slide carrier, pinworm prep kit.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: See Enterobiasis	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling**: Handle using universal percautions
Transport Temperature: ambient temperature	**Shipping Requirements:** Slide carriers, diagnostic specimen
Billing	
CPT Code: 87172	**Fees:**

Plague Culture (Isolation)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 4-14 days	**Reference Range:** None isolated
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Lymph node aspirate; Blood; Sputum; Tissue; CSF
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Telephone Laboratory (512-458-7582) prior to shipping specimen. Cultures must be held for 14 days before reporting as negative. See Yersinia pestis. Yersinia pestis is one of the agents listed on the Bioterrorism agents list. See Bioterrorism agents (Clinical -Isolation)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: <24 hrs, 2-8°C	**Shipping Requirements:**
Billing	
CPT Code: 87040, 87045, 87070	**Fees:**

Plague Culture (Identification)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 4-7 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure culture, safely contained
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Telephone Laboratory (512-458-7582) prior to shipping specimen. See Yersinia pestis. Yersinia pestis is one of the agents listed on the Bioterrorism agents list. See Bioterrorism agents (Referred -identification).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code: 87077	**Fees:**

Plague (Serological - Hemagglutination)

Reporting	
Results Available:	**Contact #s:**
Reference	
Method: Hemagglutination	
Turnaround Time: 5-7 days	**Reference Range:** <1:32 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Testing is done as requested
Diagnostic Information: The passive hemagglutination test is used to detect antibodies to Yersinia pestis. Plague serology tests have been based on the detection of antibody to whole cells and to the Y.pestis-specific F1 antigen. If a person or animal has been exposed to Y. pestis, a serum specimen taken at the proper time after exposure/infection will very likely contain anti-F1 antibodies. Confirmation of a reactive result is done using the passive hemagglutination inhibition (PHI) test. Antibody to the antigen is adsorbed out before adding the sensitized sheep red blood cells to the specimen. Agglutination of true positives in the PHI buffer will be inhibited because the free F1 antigen in the F1 buffer will react with anti-F1 and thus remove antibody that can react with the F1 bound to the sheep red blood cells.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86793	**Fees:**

Pneumococcus

Test Includes: Serological testing performed at the CDC with prior approval only.	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: Determined by CDC reports	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure Culture
Volume/Amount Required: One specimen per isolate	**Preferred Specimen:** Pure culture, safely contained
Collection/Preservation:	**Storage Instructions:** Ambient Temperature
Causes for Rejection: Nonviable, broken in transport	**Sample Container:** Agar slant in screw cap tube
Sample Test Kit:	**Availability:** Monday - Thursday
Diagnostic Information: See Streptococcus pneumoniae (Culture - Typing) for serotyping of isolates. Serotyping is performed by CDC with prior permission and available only when suspected Vaccination failure or outbreak situation exists. Recurrent infections in a single individual must be approved by CDC before submission. For confirmation of organism as Streptococcus pneumoniae, see Aerobic Bacterial Culture (Isolation).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agents
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87070, 87077	**Fees:**

Pneumocystosis (Microscopic – Giemsa Stain)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 2 days	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Open lung biopsy; Bronchial lavage
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Open lung biopsy specimen of choice. Induced sputum is not acceptable (exceptions for AIDS patients) occasionally organisms can be found in bronchial lavage specimens.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code: 87205	**Fees:**

Primary Amebic Meningoencephalitis Envirnmental (Culture - Isolation)

Test Includes: Culture, microscopic examination, transformation study	
Reporting	
Results Available: 10 days	**Contact #s:** (512) 458-7560
Reference	
Method: Culture. microscopic examination, transformation study	
Turnaround Time: 10 days	**Reference Range:** No parasites found
Limitations: Transformation study must be performed to confirm as Naegleria	**Interpretation:** By report
Specimen Requirements	
Specimen Collection: Water	**Sample Type:** Water
Volume/Amount Required: 500 mL	**Preferred Specimen:** Water
Collection/Preservation: Collect water in a clean, dry leak-proof container	**Storage Instructions:** ambient temperature
Causes for Rejection: Environmental sample not linked with confirmed case.	**Sample Container:** Clean, dry, Leak-proof container
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Survey of environmental samples is provided only to health officials with prior arrangements. Culture and transformation studies can be performed.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle according to guidelines for environmental samples.
Transport Temperature: Ambient temperature, do not refigerate	**Shipping Requirements:** Leak-proof container
Billing	
CPT Code: 87081	**Fees:**

Primary Amebic Meningoencephalitis (Culture - Identification)

Test Includes:	
Reporting	
Results Available: 1 day for direct exam; up to 10 days for culture.	**Contact #s:** (512) 458-7560
Reference	
Method:	
Turnaround Time: 1 day direct examination, up to 10 day	**Reference Range:** No parasites found
Limitations:	**Interpretation:** By report
Specimen Requirements	
Specimen Collection: spinal tap, biopsy	**Sample Type:** CSF, brain biopsy
Volume/Amount Required: 1-2 mL spinal fluid, small piece of brain tissue.	**Preferred Specimen:** Spinal Fluid, brain biopsy
Collection/Preservation: Collect by spinal tap, 1-2 mL CSF. By biopsy, collect small piece of brain tissue. Hold at ambient temperature.	**Storage Instructions:** Ambient temperature, do not refrigerate or freeze.
Causes for Rejection: Insufficient specimen; name on tube/submission form do not match.	**Sample Container:** Sterile, leak-proof container
Sample Test Kit:	**Availability:** Monday-Friday With prior notification, Saturday.
Diagnostic Information: Organisms can be cultured on nonnutrient agar plated with Eschericia coli. Direct examination of CSF and Trichrome stain can be performed.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handling body fluids using universal precautions.
Transport Temperature: Never refrigerate specimen. Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87081	**Fees:**

Primary Amebic Meningoencephalitis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mLs whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history must be included. Serum specimens are sent to the CDC with prior arrangement only.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86849	**Fees:**

Protothecosis (Culture - Isolation)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Isolate; Tissue
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Specimens are forwarded through this Laboratory to the CDC for fluorescence.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: 87081	**Fees:**

Protothecosis (Microscopic – Direct Fluorescent Antibody)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Tissue
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Specimens are forwarded through this Laboratory to the CDC for fluorescence.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: 87299	**Fees:**

Psittacosis (Serological – Forwarded by TDSHS to CDC for testing.)

Related Agents: Parrot Fever	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mLs whole blood	**Preferred Specimen:** Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Birds must be sent to Texas A&M University, School of Veterinary Medicine. Human serum specimens collected 14 days apart are forwarded to the CDC with prior arrangement.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86631, 86632	**Fees:**

Rabies (Microscopic – Direct Fluorescent Antibody)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** 512-458-7595
Reference	
Method: Direct Fluorescent Antibody test	
Turnaround Time: 24-72 hours	**Reference Range:** Negative by direct FA for rabies
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: Avoid damage to the brain: do not traumatize the head. Separate the animal head from the body immediately after death.	**Sample Type:**
Volume/Amount Required: Complete transverse section of brain stem and portions of the cerebellum or hippocampus.	**Preferred Specimen:** Animal Head
Collection/Preservation:	**Storage Instructions:** 2-8°C (do not freeze)
Causes for Rejection:	**Sample Container:** See Proper Packing for Rabies Submission
Sample Test Kit:	**Availability:**
Diagnostic Information: Whole animal carcasses are not accepted, except for bats and similar very small mammals.	
Specimen Submission	
Required Request Form: G-9	**Specimen Handling:**
Transport Temperature: 2-8°C (refrigerated), overnight	**Shipping Requirements:** Notify the laboratory of the shipment by calling 1-800-252-8163.
Billing	
CPT Code:	**Fees:**

Red Tide Analysis See also Brevitoxin (Culture – Toxin Detection)

Test Includes: Small animal inoculation	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 458-7562
Reference	
Method: Small animal inoculation	
Turnaround Time: 1 day	**Reference Range:** No toxin detected
Limitations: For shellfish testing only	**Interpretation:** By report
Specimen Requirements	
Specimen Collection: Oyster harvest	**Sample Type**: Oysters
Volume/Amount Required: 10-12 oysters	**Preferred Specimen:** Oysters
Collection/Preservation: Harvest 10-12 oysters from the affected area.	**Storage Instructions:** 2-8° C
Causes for Rejection: Specimen not collected	**Sample Container:** Leak-proof container
Sample Test Kit:	**Availability:** Monday-Sunday with prior notification
Diagnostic Information: See Brevitoxin (Culture – Toxin Detection)	
Specimen Submission	
Required Request Form: Seafood safety	**Specimen Handling:** Oysters may need to be shucked. Wear protective gloves.
Transport Temperature: 2-8° C	**Shipping Requirements:** Overnight, cold paks.
Billing	
CPT Code:	**Fees:**

Relapsing Fever (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** <1.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mLs whole blood	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: The test procedure is used for investigational use and clinical history of the patient is required. Sera are forwarded to the CDC with prior approval (512) 458-7760.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86619	**Fees:**

Respiratory Syncytial Virus (Culture – Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-458-7594
Reference	
Method: Cell Culture	
Turnaround Time: 2-14 days	**Reference Range:** No virus isolated
Limitations:	**Interpretation:** A result of "No virus isolated" does not necessarily mean absence of a viral agent. The success of virus isolation depends a great deal on the submission of the proper specimen, collected at the right time, adequately maintained, and shipped with the least possible delay.
Specimen Requirements	
Specimen Collection: Specimens should be collected at an appropriate anatomic site and at the proper time after infection because viruses are generally shed for only a short period of time. Refer to Specimen Collection by Type table for additional instructions.	**Sample Type:** See preferred specimen
Volume/Amount Required: Swabs in 2-4 mLs of viral transport media.	**Preferred Specimen:** Throat swab, NP swab, NP secretions
Collection/Preservation: Viral transport media.	**Storage Instructions:** Maintain specimens at 2-8°C immediately after collection. Ship with the least possible delay.
Causes for Rejection: Specimens submitted on a preservative such as formalin.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Specimens are inoculated onto a variety of cell culture monolayers. If characteristic CPE is observed, confirmation of identification will be performed.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: 2-8°C, overnight	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252	**Fees:**

Respiratory Syncytial Virus (Culture – Identification)

Test Includes: Immunofluoresence	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-458-7594
Reference	
Method: Immunofluorescence	
Turnaround Time: 2-14 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: Fill monolayer tube with media if transporting at ambient temperature. If transporting on dry ice, send 1-2 mLs.	**Preferred Specimen:** Cell culture isolate with CPE.
Collection/Preservation:	**Storage Instructions:** If shipment of isolate will be delayed, store at -70° C.
Causes for Rejection:	**Sample Container:** Cell culture tube or sterile cryovial.
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Identification based on immunofluorescence test using RSV-specific monoclonal antibody.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Monolayer with CPE: Ambient temperature. Frozen isolate: on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87253	**Fees:**

Ringworm (Culture – Isolation)

Names of Related Agents: Trichophyton species, Microsporum species, etc.

Test Includes: Isolation of fungus and identification by morphological and physiological tests.	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Slide culture and physiological tests for identification to species	
Turnaround Time: 21-28 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required:	**Preferred Specimen:** Tissue; Scrapings; Nail; Hair
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. These organisms are susceptible to lower temperatures so storage and transport should be at room temperature.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Skin scrapings, nail and hair clippings should be transported dry.
Sample Test Kit:	**Availability:** Testing available upon approval by Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87101	**Fees:**

Ringworm (Culture – Identification)

Names of Related Agents: Trichophyton species, Microsporum species, etc.

Test Includes: Identification of fungus to species level by morphological and physiological tests.	
Reporting	
Results Available: 14-21 days	**Contact #s:** 512-458-7586
Reference	
Method: Slide culture and physiological tests	
Turnaround Time: 14-21 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday-Friday
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87106	**Fees:**

Rocky Mountain Spotted Fever (Serological – Immunofluorescence Assay)

Test Includes:	
Reporting	
Results Available: 3-5 days	**Contact #s:**
Reference	
Method: IFA	
Turnaround Time: 3-5 days	**Reference Range:** <1:64 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed twice per week
Diagnostic Information: The rickettsial micro IFA test is a standard two-step sandwich immunofluorescence technique. In the first stage the Rickettsia rickettsii antigen is overlaid with dilutions of human serum. In the second stage, the antigen is overlaid with a fluorescein-conjugates antihuman globulin, so that the antigens are rendered fluorescent by positive sera. The most convincing evidence of recent rickettsiae infection of a four-fold rise in titier between the acute serum and the convalescent serum. Single titers of 1:128 are considered the minimum for significant titers. Serum specimens must be collected 14 days apart. The test is performed twice per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86757	**Fees:**

Rotavirus (Microscopic – Electron Microscopy)

Test Includes: Electron Microscopy	
Reporting	
Results Available: 1-2 days	**Contact #s:** 512-458-7594
Reference	
Method: Electron Microscopy	
Turnaround Time: 1-2 days	**Reference Range:** No virus detected by electron microscopy.
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: Specimens should be collected at an appropriate anatomic site and at the proper time after infection because viruses are generally shed for only a short period of time. Refer to Specimen Collection by Type table for additional instructions.	**Sample Type:** See preferred specimens.
Volume/Amount Required: 2-4g of stool	**Preferred Specimen:** Feces
Collection/Preservation: Viral transport media	**Storage Instructions:** Maintain specimens at 2-8°C immediately after collection, ship with the least possible delay.
Causes for Rejection: Specimens submitted on a preservative such as formalin.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Specimens are concentrated onto grids and stained with phosphotungstic acid to allow visualization of rotavirus particles.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: 2-8°C overnight	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 88348	**Fees:**

Rubella (Immune Status Only, for Maternal Child Health Clients) (Serological – Enzyme Immunoassay)

Test Includes:	
Reporting	
Results Available: 1-2 days	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 1-2 days	**Reference Range:** < 10 IU/mL (Nonreactive)
Limitations: May not detect a recent immunization or infection, or immune status in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed daily
Diagnostic Information: Patient results equal to or greater than 10 IU/mL indicate either past exposure to rubella virus, or vaccination and probable protection from clinical infection. Antibody levels < 10 IU/mL may be insufficient to provide protection from rubella virus infection. Single specimens for immune status determination are accepted only from health units in the Rubella Screening Program and TDSHS employees. The test is performed daily.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86762	**Fees:**

Rubella (Culture – Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 7-21 days	**Contact #s:** 512-458-7594
Reference	
Method: Cell Culture	
Turnaround Time: 7-21 days	**Reference Range:** No virus isolated
Limitations:	**Interpretation:** A result of "No virus isolated" does not necessarily mean absence of a viral agent. The success of virus isolation depends a great deal on the submission of the proper specimen, collected at the right time, adequately maintained, and shipped with the least possible delay.
Specimen Requirements	
Specimen Collection: Specimens should be collected at an appropriate anatomic site and at the proper time after infection because viruses are generally shed for only a short period of time. Refer to Specimen Collection by Type table for additional instructions.	**Sample Type:** See preferred specimens.
Volume/Amount Required: 10-20 mLs of urine, respiratory specimens in 2-4 mLs of viral transport media, tissues in enough viral transport media to prevent drying, 2-5 mL of CSF	**Preferred Specimen:** Urine; Respiratory secretions; tissue; CSF
Collection/Preservation:	**Storage Instructions:** Arriving < 3-4 days after collection, store and send at 2-8° C. Arriving > 3-4 days after collection, store and send at -70° C.
Causes for Rejection: Specimens submitted on a preservative such as formalin.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: VERO cell monolayers are inoculated in addition to the variety of cell cultures routinely inoculated. Multiple passages may be required before a final result is available. Identification tests using rubella-specific monoclonal antibody are done at routine intervals during the isolation process.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Arriving <3-4 days: 2-8° C Arriving >3-4 days: send on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252	**Fees:**

Rubella (Culture – Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 7-21 days	**Contact #s:** 512-458-7594
Reference	
Method: Immunofluorescence	
Turnaround Time: 7-21 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: Fill monolayer tube with media if transporting at ambient temperature. If transporting on dry ice, send 1-2 mLs.	**Preferred Specimen:** Cell culture tube with CPE.
Collection/Preservation:	**Storage Instructions:** If shipment of isolate will be delayed, store isolate at -70° C.
Causes for Rejection:	**Sample Container:** Cell culture tube or sterile cryovial.
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Identification is based on immunofluorescence test using rubella-specific monoclonal antibody.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Monolayer with CPE: Ambient temperature. Frozen isolate: on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87253	**Fees:**

Rubella, IgG or IgM (Serological – Enzyme Immunoassay)

Test Includes:	
Reporting	
Results Available: 3-5 days	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 3-5 days	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amt. Required: 2 mL Serum	**Preferred Specimen:** Paired Sera; Single Serum
Collection/Preservation: Samples that will be delivered to the laboratory within 8 hours of collection may be transported at room temperature in the original blood collection tube. If the samples are going to be shipped and will be delivered to the laboratory within 48 hours of collection, sera must be separated from the blood and shipped on cold packs, between 2° and 8°C. If the serum samples will not be delivered to the laboratory within 48 hours of collection at these temperatures, then the samples must be frozen at -20°C or lower and shipped on dry ice.	**Storage Instructions:** Separated serum may be held at 2-8°C, or frozen at -20°C.
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, specimens received with extended transit time, or received at incorrect temperature.	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed twice per week
Diagnostic Information: A significant rise in rubella-specific IgG antibody level on paired sera collected 10-14 days apart or the presence of significant Rubella-specific IgM antibody level in single sera is evidence of current infection. Single serum for determination of Rubella-specific IgM level should be collected 3 days after onset. Test is performed twice per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions

Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86762	**Fees:**

Rubeola (Measles) (Culture – Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 5-21 days	**Contact #s:** 512-458-7594
Reference	
Method: Cell culture	
Turnaround Time: 5-21 days	**Reference Range:** No virus isolated
Limitations:	**Interpretation:** A result of "No virus isolated" does not necessarily mean absence of a viral agent. The success of virus isolation depends a great deal on the submission of the proper specimen, collected at the right time, adequately maintained, and shipped with the least possible delay.
Specimen Requirements	
Specimen Collection: Specimens should be collected at an appropriate anatomic site and at the proper time after infection because viruses are generally shed for a short period of time. Refer to Specimen Collection by Type table for additional instructions.	**Sample Type:** See preferred specimen
Volume/Amount Required: 10-20 mLs of urine, tissue in enough viral transport media to prevent drying, or swabs in 2-4 mLs of viral transport media	**Preferred Specimen:** Urine; Tissue; Throat Swab; Nasopharyngeal Secretions; Buffy Coat Blood
Collection/Preservation:	**Storage Instructions:** Arriving < 3-4 days after collection, store and send at 2-8° C. Arriving > 3-4 days after collection, store and send at -70° C.
Causes for Rejection: Specimens submitted on a preservative such as formalin.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: B95a cell monolayers are inoculated in addition to the variety of cell cultures routinely inoculated. Multiple passages may be required before a final result is available. If characteristic CPE is observed, confirmation of identification will be performed.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Arriving less than 2-3 days: send at 2-8° C, Arriving greater than 2-3 days: send on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 86752	**Fees:**

Rubeola (Measles) (Culture – Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 10-14 days	**Contact #s:** 512-458-7594
Reference	
Method: Immunofluorescence	
Turnaround Time: 10-14 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: Fill monolayer tube with media if transporting at ambient temperature. If transporting on dry ice, send 1-2 mLs.	**Preferred Specimen:** Cell culture isolate with CPE.
Collection/Preservation:	**Storage Instructions:** If shipment of isolate will be delayed, store at -70° C.
Causes for Rejection:	**Sample Container:** Cell culture tube or sterile cryovial.
Sample Test Kit:	**Availability:**
Diagnostic Information: Identification is based on immunofluorescence test using rubeola-specific monoclonal antibody.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Monolayer with CPE: ambient temperature Frozen isolate: on dry ice.	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 86753	**Fees:**

Rubeola (Measles), IgG or IgM (Serological – Enzyme Immunoassay)

Test Includes:	
Reporting	
Results Available: 5-7 days	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 5-7 days	**Reference Range:** <1.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum. CSF
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Paired Sera; Single Serum; Spinal Fluid
Collection/Preservation: Sterile tube for CSF. Samples that will be delivered to the laboratory within 8 hours of collection may be transported at room temperature in the original blood collection tube. If the samples are going to be shipped and will be delivered to the laboratory within 48 hours of collection, sera must be separated from the blood and shipped on cold packs, between 2° and 8°C. If the serum samples will not be delivered to the laboratory within 48 hours of collection at these temperatures, then the samples must be frozen at -20°C or lower and shipped on dry ice.	**Storage Instructions:** Separated serum may be held at 2-8°C or frozen at -20°C. Freeze CSF immediately.
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, specimens received with extended transit time, or received at incorrect temperature.	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed once per week
Diagnostic Information: A significant rise in measles-specific IgG antibody level on paired sera collected 10-14 days apart or the presence of significant measles-specific IgM antibody level on single serum indicates current infection. Single serum for determination of measles-specific IgM should be collected 4 days after onset. Spinal fluid is specimen of choice for diagnosing subacute sclerosing panencephalitis. Test is performed once per week.	

Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86765	**Fees:**

Salmonellosis Culture –(Isolation)

Test Includes: Conventional biochemicals, serological typing	
Reporting	
Results Available: 4-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals, serological typing	
Turnaround Time: 4-7 days	**Reference Range:** No Salmonella isolated.
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: Stool, blood	**Sample Type:**
Volume/Amount Required: > 10 grams stool, 20 mL whole blood	**Preferred Specimen:** Stool in enteric transport; Blood;
Collection/Preservation: Collect stool and place in enteric transport such as Cary-Blair, Aimes, or Stuart's transport.	**Storage Instructions:** 2-8° C
Causes for Rejection: Unpreserved stools > 48 hours	**Sample Container:** Enteric transport container
Sample Test Kit:	**Availability:** Monday-Friday Outbreak situations prior arrangements- Saturday-Sunday.
Diagnostic Information: Fecal specimens are accepted only from public health officials. For food analysis see Food Poisoning (Culture - Isolation) For Fecal Specimens see Aerobic Bacterial Culture, Stool (Isolation) For Molecular analysis Molecular typing (PFGE).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: 2-8° C	**Shipping Requirements:** Triple contained, overnight on ice.
Billing	
CPT Code: 87045	**Fees:**

Salmonellosis Culture–(Identification)

Test Includes: Conventional biochemicals, serological typing	
Reporting	
Results Available: 4-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals, serological typing	
Turnaround Time: 4-7 days	**Reference Range:** No Salmonella isolated.
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: One specimen per patient	**Preferred Specimen:** Pure culture
Collection/Preservation:	**Storage Instructions:** Ambient temperature
Causes for Rejection: Name on tube/form do not match	**Sample Container:**
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: For Food analysis see Food (Culture –(Identification) For Clinical isolates see Aerobic Bacterial Culture, (Identification) For Molecular analysis, see Molecular typing (PFGE).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, biosafety level 2
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Salmonellosis Culture –(Typing)

Test Includes: serological typing	
Reporting	
Results Available: 7-14 days	**Contact #s:** (512) 458-7185
Reference	
Method: Slide and tube agglutination	
Turnaround Time: 7-14 days	**Reference Range:** By report
Limitations: Organism must be viable to perform serotyping	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: one specimen per patient	**Preferred Specimen:** Pure culture on agar slant
Collection/Preservation:	**Storage Instructions:** Ambient temperature
Causes for Rejection:	**Sample Container:** Agar slant in screw cap tube
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Serotying is performed on all isolates and all referred cultures submitted for identification. Complete serotyping includes both somatic and flagellar antigens. PFGE molecular studies for strain relatedness is performed at TDSHS. For Molecular analysis see Molecular typing (PFGE).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, biosafety level 2
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87147	**Fees:**

Shistosomiasis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available: 3 weeks	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** <1.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mLs whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Serological testing at the CDC is available if urine and stool specimens have been examined and are Nonreactive and if this remains a possibility. Prior notification is requested (512) 458-7760. A detailed patient history is required.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86849	**Fees:**

Schistosomiasis (Microscopic – Direct Concentration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:** Negative report indicates that there were no visible parasites in the specimen submitted.
Specimen Requirements	
Specimen Collection: Feces, Urine	**Sample Type:** Feces, Urine
Volume/Amount Required: 15 mL liquid stool, 15 g stool; Urine- 15 mL	**Preferred Specimen:** Feces in formalin– Schistosoma mansoni, Schistosoma japonicum; Urine, unpreserved or in formalin – Schistosoma haematobium
Collection/Preservation: Collect stool in clean, dry container. Transfer to formalin preservative. Collect urine in clean, dry, leak-proof container.	**Storage Instructions:** Ambient temperature
Causes for Rejection:	**Sample Container:** Formalin transport for parasites
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Eggs can not be detected in the stool until the worms are mature (may take 4 to 7 weeks from initial infection). In very light or chronic infections, eggs may be very difficult to detect in stool; therefore, multiple stool examinations may be required.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87015	**Fees:**

Schistosomiasis (Microscopic – Urine Filtration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:** Negative report indicates that there were no visible parasites in the specimen submitted
Specimen Requirements	
Specimen Collection: Urine	**Sample Type:** Urine
Volume/Amount Required: 15 mL	**Preferred Specimen:** Urine
Collection/Preservation: Collect urine in a sterile leak-proof container. Transport at ambient temperature. Urine can be transported unpreserved or in formalin.	**Storage Instructions:** ambient temperature
Causes for Rejection:	**Sample Container:** Clean, dry, leakproof container.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: S. haematobian infections are usually detected in the urine, although in heavy infections they may also be found in the stools.Occasionally eggs of S. mansoni are detected in the urine.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87015	**Fees:**

Shigellosis Culture (Isolation)

Test Includes: Conventional biochemicals, serological typing	
Reporting	
Results Available: 3-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals, serological typing.	
Turnaround Time: 3-10 days	**Reference Range:** No enteric pathogens isolated
Limitations: Stools should be collected prior to initiation of antibiotic therapy.	**Interpretation:** Negative report indicates that there were no viable enteric pathogens in the specimen submitted.
Specimen Requirements	
Specimen Collection: feces, rectal swab	**Sample Type:** feces, rectal swab
Volume/Amount Required: 10 mL liquid stool, or 10 g stool	**Preferred Specimen:** >10 g feces in enteric transport such as Cary-Blair, Aimes, or Stuart's transport; rectal swab in enteric transport
Collection/Preservation: Collect stool in clean, dry container. Transfer at least 10 grams into the enteric transport medium. Hold at 2-8° C and transport overnight.	**Storage Instructions:** 2-8° C
Causes for Rejection:	**Sample Container:** Enteric transport, or clean, leak-proof container.
Sample Test Kit:	**Availability:** Monday-Friday Outbreak investigations with prior notification: Saturday-Sunday.
Diagnostic Information: Fecal specimens are accepted only from public health officials. All Shigella species isolated are serotyped. See Shigellosis Culture (Typing) See Food Poisoning (Culture - Isolation) For Molecular analysis Molecular typing (PFGE).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: 2-8° C	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87045	**Fees:**

Shigellosis Culture (Identification)

Test Includes: Conventional Biochemicals, Serological typing.	
Reporting	
Results Available: 3-10 days	**Contact #s:** (512) 458-7185
Reference	
Method: Conventional biochemicals, slide agglutination,	
Turnaround Time: 5-7 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: One specimen per patient.	**Preferred Specimen:** Pure culture
Collection/Preservation:	**Storage Instructions:** Ambient temperature
Causes for Rejection:	**Sample Container:** Agar slant in screw cap tube
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Food specimens accepted from public health officials, or from physicians as specified in instructions, see Food (Culture –(Identification) For Molecular analysis Molecular typing (PFGE).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, biosafety level 2
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Shigellosis Culture (Typing)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 7-10 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure cultures, safely contained
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Serotying is performed on all Shigella species submitted for identification. PFGE for strain relatedness done at TDSHS. Contact Lab for submission instructions. Molecular analysis at TDSHS upon request. For Molecular analysis Molecular typing (PFGE).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code: 87147	**Fees:**

Sporotrichosis (Culture – Isolation)

Test Includes: Isolation of fungus and identification by morphological and physiological tests	
Reporting	
Results Available: 14-21 days	**Contact #s:** 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Slide culture; conversion at 37º C	
Turnaround Time: 14-21 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Exudate; Tissue; Sputum; Aspirate
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline.	**Sample Container:** Triple contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL sterile saline to tissue if needed to maintain moisture for transport.
Sample Test Kit:	**Availability:** Testing available upon approval by Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87102	**Fees:**

Sporotrichosis (Culture – Identification)

Test Includes: Identification of fungus to species level by morphological and physiological tests	
Reporting	
Results Available: 14-21 days	**Contact #s:** 512-458-7586
Reference	
Method: Slide culture; conversion at 37º C	
Turnaround Time: 14-21 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday-Friday
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87106	**Fees:**

Sporotrichosis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available: 3 weeks	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** <1:16 (nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mLs whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. A titer of 1:16 provides presumptive evidence of infection.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86671	**Fees:**

St. Louis Encephalitis (Serological – Enzyme Immunoassay (IgM capture and IgG)

Reporting	
Results Available: 1-3 days	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 1-3 days	**Reference Range:** <2.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system. May cross react with other arthropod borne viruses.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Paired Sera; Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed daily
Diagnostic Information: IgG titers of >1:16 are suggestive of exposure, while the presence of IgM indicates recent infection. Human infections are seasonal, from mid- to late-summer, occurring throughout the southern, southwestern and west central states. Serological cross-reactions with Yellow Fever and Dengue Fever disease and immunization. While a single serum may be tested, a second specimen collected 7-14 days later may be required for best evidence of recent infection.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86653	**Fees:**

Staphylococcus (Culture – Identification)

Test Includes: Conventional biochemicals, API Staph	
Reporting	
Results Available: 5-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals, API Staph	
Turnaround Time: 5-7 days	**Reference Range:** By report
Limitations:	**Interpretation:** By report
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: one specimen per patient.	**Preferred Specimen:** Pure culture on agar slant
Collection/Preservation: ambient temperature	**Storage Instructions:** ambient temperature
Causes for Rejection: Name on tube/form do not match; Broken in transport	**Sample Container:** Agar slant in screw cap tube
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Phage typing is no longer performed and has been replaced by molecular analysis. PFGE for strain relatedness is performed at TDSHS. For Molecular analysis see Molecular typing (PFGE) Referred clinical isolates for identification: See Aerobic Bacterial Culture, (Identification), Food (Culture –(Identification).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle as an infectious agent
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Staphylococcus (Culture – TSST-1 testing)

Test Includes: TSST-1 toxin assay	
Reporting	
Results Available: 1-2 days	**Contact #s:** (512) 458-7582
Reference	
Method: Reverse passive latex agglutination	
Turnaround Time: 1-2 days	**Reference Range:** No TSST-1 toxin demonstrated
Limitations:	**Interpretation:** Negative report indicates that there was no detectable TSST-1 toxin in the specimen submitted. This test does not detect any other types of toxins that might be present in the specimen.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: one specimen per patient.	**Preferred Specimen:** Pure culture on agar slant
Collection/Preservation:	**Storage Instructions:** ambient temperature
Causes for Rejection: Name on tube/form do not match, Broken in transport.	**Sample Container:** Agar slant in screw cap tube
Sample Test Kit:	**Availability:** Monday- Friday
Diagnostic Information: Contact Laboratory for submission instructions a (512) 458-7582 Referred clinical isolates for identification: See Aerobic Bacterial Culture, (Identification).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87999	**Fees:**

Staphylococcus Culture (Isolation)

Test Includes: Conventional biochemicals, API Staph	
Reporting	
Results Available: 3-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: conventional biochemicals, API Staph	
Turnaround Time: 3-7 days	**Reference Range:** None isolated
Limitations: Organism must be viable for culture studies. Specimen must be collected prior to initiation of antimicrobial studies.	**Interpretation:** No Staphlylococcus aureus isolated indicates that there were no viable organisms in the specimen.
Specimen Requirements	
Specimen Collection: stool, wound	**Sample Type:** stool, wound
Volume/Amount Required: 10 g stool or 10 mL liquid stool;	**Preferred Specimen:** Stool in aimes or stuart's transport; wound swab in aimes or stuart's transport.
Collection/Preservation: Collect stool in clean, dry container. Transfer to aimes or stuart's transport. Remove Store at 2-8° C.	**Storage Instructions:** 2-8° C.
Causes for Rejection:	**Sample Container:** Transport tube
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Food samples are tested for Staphylococcal enterotoxin when requested. See Food Poisoning Culture (Toxin Detection) Culture studies are performed only requested. Food Poisoning (Culture - Isolation).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: 2-8 °C	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87077	**Fees:**

Staphylococcus (Culture – Enterotoxin testing)

Test Includes: Enterotoxin testing	
Reporting	
Results Available: 2-4 days	**Contact #s:** (512) 458-7562
Reference	
Method: Mini-Vidas	
Turnaround Time: 2-4 days	**Reference Range:** Toxin not detected
Limitations: This test is approved for food testing only. Human specimens cannot be reported using this technology.	**Interpretation:** The test used detects *Staphylococcus aureus* enterotoxin A,B,C,D,E,
Specimen Requirements	
Specimen Collection: food	**Sample Type:** Food
Volume/Amount Required: 25 grams	**Preferred Specimen:** Food
Collection/Preservation: Food must be collected by a sanitarian or health official.	**Storage Instructions:** 2-8° C
Causes for Rejection: Insufficient food for testing	**Sample Container:** Clean, dry leak-proof container.
Sample Test Kit:	**Availability:** Monday-Friday Outbreak Investigations with prior notification: Saturday-Sunday.
Diagnostic Information: Contact Laboratory for submission instructions. Food specimens accepted from public health officials, or from physicians as specified in instructions for Food Poisoning, see Food (Pathogens –(Isolation).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** In accordance with FDA guidelines for food testing.
Transport Temperature: 2-8° C	**Shipping Requirements:** Leak-proof container
Billing	
CPT Code: 87999	**Fees:**

Streptococcus, Group A (emm typing)

Test Includes: Test not performed at TDSHS. Submitted to CDC with prior approval.	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: Dependent on CDC report	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: one specimen per patient	**Preferred Specimen:** Pure culture
Collection/Preservation:	**Storage Instructions:** Ambient Temperature
Causes for Rejection: Specimens must have prior approval for submission to the CDC. Specimens not approved will be rejected for testing.	**Sample Container:** Agar slant in screw cap tube
Sample Test Kit:	**Availability:** Monday - Thursday
Diagnostic Information: Strains from sterile sites resulting in systemic cases and associated with a fatality are sent to the CDC for emm typing. Prior approval from the CDC is required before isolate can be shipped to the CDC. Molecular typing such as PFGE is of little value in determining relatedness of strains and should not be utilized to determine outbreak relatedness.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious Agent
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87430	**Fees:**

Strongyloidiasis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available: 3 weeks	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** <1.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mLs whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Strongyloides stercoralis is a parasitic nematode found in tropical and subtropical regions. Antibody titer decrease in many patients following treatment. Significant cross-reactivity may be observed with filarial and other nematode infections. Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum specimens are sent to the CDC. Referred material accepted from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86849	**Fees:**

Strongyloidiasis (Microscopic – Direct)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 3 days	**Reference Range:** No parasites seen
Limitations:	**Interpretation:** Negative report indicates that there were no visible parasites in the specimen submitted.
Specimen Requirements	
Specimen Collection: Feces, sputum	**Sample Type:** Feces, sputum
Volume/Amount Required: 15 mL liquid stool, 15 g stool, 10-15 mL sputum	**Preferred Specimen:** Feces in formalin; Sputum
Collection/Preservation: Collect stool in clean, dry container. Transfer immediately to formalin preservative. Collect sputum in clean, dry container. Hold at ambient temperature.	**Storage Instructions:** ambient temperature; do not refrigerate or freeze.
Causes for Rejection: Unpreserved stool > 5 hours	**Sample Container:**
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Fecal specimens must be sent in fresh (less that five hours) or in formalin. Sputum specimens can also be sent. Referred material accepted from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions. Formalin is a poison, handle with care.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87177	**Fees:**

Swimming Pool Water

Test Includes: Coliform testing with prior approval under certain circumstances.	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:**
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Coliform testing is provided under special circumstances only with prior arrangement.	
Specimen Submission	
Required Request Form: G-79	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code:	**Fees:**

Syphilis (Serological – Rapid Plasma Reagin Card)

Reporting	
Results Available: 1-2 Days	**Contact #s:**
Reference	
Method: RPR Card Test (agglutination)	
Turnaround Time: 1-2 days	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that patient doesn't have detectable antibody to the infectious agent. Reactive indicates that patient has detectable antibody to infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amt. Required: 5 mL serum	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top, tiger top or spun SST tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, gross hemolysis	**Sample Container:** Tiger top or spun SST tube
Sample Test Kit:	**Availability:** Test performed daily
Diagnostic Information: The rapid plasma reagin (RPR) card test is a macroscopic, non-treponemal flocculation test for the qualitative and semi-qualitative serological detection of syphilis. Nontrepo-nemal tests for syphilis become reactive 4-6 weeks after infection with titers peaking during secondary to early latent stage. Treatment in the primary or secondary stages usually results in a rapid decline in titer. Treatment given in latent or late stages has less effect on antibody titers and the test may remain reactive at low titers indefinitely. The reagin-type antibody binds with the antigen that is composed of a complex of cardiolipin, lecithin and cholesterol particles with activated charcoal; the result of this antigen-antibody reaction is a macroscopic flocculation that shows up as black clumps against the white card. The RPR-Card test is a screening test and without some other evidence for the diagnosis of syphilis, a reactive non-treponemal test does not confirm Treponema pallidum infection. The RPR-Card test does not distinguish between syphilis and other treponematoses such as yaws, pinta and bejel. The semi-qualitative RPR-Card Test may be used as a method to follow response to treatment. A four-fold or greater drop in titer between pre- and post-treatment specimens is indicative of response to therapy. Test is performed daily.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Separated serum or spun SST tube at 2-8°C (refrigerated) or serum -20°C (frozen).	**Shipping Requirements:** Triple contain. Separated serum, or spun SST Tubes within 5 days may be shipped overnight on cold packs (2-8°C), or > 5 days, ship serum frozen (-20°C) and mail on dry ice
Billing	
CPT Code: 86592	**Fees:**

Syphilis [Serological – Treponema pallidum - Particle Agglutination (TP-PA)]

Test Includes:	
Reporting	
Results Available: 3-4 days	**Contact #s:**
Reference	
Method: Agglutination	
Turnaround Time: 3-4 days	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amt. Required: 5 mL serum	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, gross hemolysis	**Sample Container:** Spun SST tubes orTiger top tube
Sample Test Kit:	**Availability:** Test performed three times per week
Diagnostic Information: The Serodia TP-PA is a qualitative gelatin particle agglutination assay for the detection of Treponemal pallidum antibodies in human serum. The test is based on the agglutination of colored gelatin particles sensitized with T. pallidum antigen. Serum containing specific antibodies will react with the antigen sensitized gelatin particles to form a smooth mat of agglutinated particles. A compact button formed by the settling of non-agglutinated particles characterizes negative reactions. Unlike the nontreponemal tests, once the TP-PA test becomes reactive, it remains reactive for many years. Since the reactivity found with the TP-PA does not indicate response to therapy, it is not suitable for monitoring treatment. The TP-PA test does not distinguish between syphilis and other treponematoses such as yaws, pinta and bejel. TP-PA is run only if the RPR Card test results performed at TDSHS are reactive. Otherwise, justification is required for performing TP-PA test. The test is run three times per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Separated serum or spun SST tubes at 2-8°C (refrigerated) or serum -20°C (frozen).	**Shipping Requirements:** Triple contain. Separated serum, or spun SST Tubes within 5 days may be shipped overnight on cold packs (2-8°C), or > 5 days, ship serum frozen (-20°C) and mail on dry ice
Billing	
CPT Code: 85680	**Fees:**

Syphilis [Serological – Fluorescent Treponemal Antibody Absorbed (FTA-ABS)]

Test Includes:	
Reporting	
Results Available: 5-6 days	**Contact #s:**
Reference	
Method: IFA	
Turnaround Time: 5-6 days	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 5 mL Serum	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top, spun SST tube, or tiger top tube	**Storage Instructions:** Separated serum or spun SST tubes may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, gross hemolysis	**Sample Container:** Spun SST tubes or tiger top tube
Sample Test Kit:	**Availability:** Test performed twice per week
Diagnostic Information: The FTA-ABS is a specific treponemal assay to detect antibody to T. pallidum. The FTA-ABS becomes reactive 4-6 weeks after infection. Unlike the nontreponemal tests, once the FTA-ABS test becomes reactive, it remains reactive for many years. Since the reactivity found with the FTA-ABS does not indicate response to therapy, it is not suitable for monitoring treatment. The FTA-ABS test does not distinguish between syphilis and other treponematoses such as yaws, pinta and bejel. FTA-ABS is for in-house use only or with justification. The test is run twice per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Separated serum or spun SST tubes at 2-8°C (refrigerated) or serum -20°C (frozen).	**Shipping Requirements:** Triple contain. Separated serum, or spun SST Tubes within 5 days may be shipped overnight on cold packs (2-8°C), or > 5 days, ship serum frozen (-20°C) and mail on dry ice.
Billing	
CPT Code: 85680	**Fees:**

Syphilis (Serological – Venereal Disease Research Laboratory)

Test Includes: Slide agglutination	
Reporting	
Results Available: 3-5 days	**Contact #s: 512-458-7578**
Reference	
Method: Agglutination	
Turnaround Time: 3-5 days	**Reference Range:** Nonreactive
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Spinal Tap	**Sample Type:** CSF
Volume/Amount Required: 1 mLs CSF minimum	**Preferred Specimen:** Spinal Fluid
Collection/Preservation: Sterile collection tube	**Storage Instructions:** CSF may be transported at 2-8°C (ice packs) if the specimen will arrive at the laboratory within 5 days. If not, freeze CSF immediately, store at -20°C.
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of CSF for testing	**Sample Container:** Sterile collection tube
Sample Test Kit:	**Availability:** Test performed twice per week
Diagnostic Information: The VDRL is a non-treponemal test to detect lipoidal antigen to T. pallidum. VDRL is run on spinal fluid specimens only, for suspected neurosyphilis. A reactive VDRL test on CSF, free of blood or other contaminants, almost always indicates past or present syphilis infection of the central nervous system. The test is run twice per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: 2-8° for 5 days, or -20°C (frozen).	**Shipping Requirements:** Triple contained, on ice packs at 2-8 °C for five days, or frozen (-20°C) and mailed overnight on dry ice.
Billing	
CPT Code: 86592	**Fees:**

Taeniasis (Microscopic – Direct Concentration Clearing)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic Examination	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: Feces	**Sample Type:** Feces
Volume/Amount Required: 15 mL liquid stool, 15 g stool,	**Preferred Specimen:** Feces in formalin; Proglottid; Scolex
Collection/Preservation: Collect stool in clean, dry container. Immediately transfer to formalin preservative. Hold at ambient temperature.	**Storage Instructions:** ambient temperature
Causes for Rejection:	**Sample Container:** Formalin transport for parasites.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Fecal specimens must be submitted fresh (less than five hours) or in formalin. Submit proglottid in ethyl alcohol. Referred material from hospital, private, and reference labs. Examination of proglotids can help to determine species of Taenia infection.	
Specimen Submission	
Required Request Form: G-1A	**Specimen Handling:** Handle body fluids using universal precautions. Formalin is a poison, handle with care.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code:	**Fees:**

Tapeworm, Other Diphyllobothrium latum, Hymenolepis nana, Hymenolepis diminuta
(Microscopic – Clearing Exam)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic Examination	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: feces, proglottid, scolex	**Sample Type:** Proglottid; Scolex; Feces
Volume/Amount Required: 15 mL liquid feces, 15 g feces	**Preferred Specimen:** Proglottid; Scolex; Feces
Collection/Preservation: Collect the stool in a clean, dry container. Immediately transfer to formalin. Store at ambient temperature. Collect proglottid or scolex and place in a clean leak-proof container with ethyl alcohol.	**Storage Instructions:** Ambient temperature
Causes for Rejection: Unpreserved stool > 5 hours old	**Sample Container:** Formalin transport for parasites. Clean leak-proof container with ethyl alcohol for transport of proglottid, scolex.
Sample Test Kit:	**Availability:**
Diagnostic Information: Fecal specimens must be submitted fresh (less than five hours) or in formalin. Submit proglottid in ethyl alcohol. Referred material from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions. Formalin is a poison, handle with care.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87177	**Fees:**

Tetanus (Culture – Isolation)

See also Anaerobic Bacterial Culture, Special (Isolation)

Test Includes: Conventional biochemicals, Rapid ANA, API Ana Ident, GLC	
Reporting	
Results Available: 5-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: GLC, Conventional biochemicals, Rapid Ana; API Ana Ident.	
Turnaround Time: 5-10 days	**Reference Range:** No bacteria isolated
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: Biopsy	**Sample Type**: Tissue
Volume/Amount Required: Small piece of tissue	**Preferred Specimen**: **Tissue**
Collection/Preservation: By biopsy, collect a small piece of tissue. Place in a sterile, leak-proof container.	**Storage Instructions:** 2-8° C
Causes for Rejection: Aerobic environment used for shipment.	**Sample Container:** Anaerobic environment
Sample Test Kit:	**Availability:** Monday-Friday With prior notification: Saturday-Sunday
Diagnostic Information: **See Anaerobic Bacterial Culture, Special (Isolation)**	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions
Transport Temperature: 2-8º C	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87075	**Fees:**

Tetanus (Culture – Identification)

See also Anaerobic Bacterial Culture (Identification)

Test Includes: Conventional biochemicals, Rapid ANA, API Ana Ident, GLC	
Reporting	
Results Available: 5-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: GLC, Conventional biochemicals, Rapid Ana; API Ana Ident.	
Turnaround Time: 5-10 days	**Reference Range:** By Report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: one specimen per patient	**Preferred Specimen:** Pure culture in anaerobic transport medium
Collection/Preservation:	**Storage Instructions:** ambient temperature
Causes for Rejection: Aerobic transport used for shipment	**Sample Container:** anaerobic transport
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: See Anaerobic Bacterial Culture (Identification)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent
Transport Temperature: ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87076	**Fees:**

Tetanus (Culture – Toxin Selection)

See also Anaerobic Bacterial Toxin Detection (Identification)

Test Includes: Toxin studies	
Reporting	
Results Available: 3-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Animal inoculation	
Turnaround Time: 3-7 days	**Reference Range:** No toxin demonstrated
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: One specimen per patient	**Preferred Specimen:** Pure culture in anaerobic transport
Collection/Preservation:	**Storage Instructions:** ambient temperature
Causes for Rejection: Aerobic transport used for shipment.	**Sample Container:** Anaerobic transport
Sample Test Kit:	**Availability:** Monday – Friday With prior notification: Saturday-Sunday
Diagnostic Information: Anaerobic Bacterial Toxin Detection (Identification)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87076	**Fees:**

Toxocariasis (Serological – Forwarded by TDSHS to CDC for testing.)

Reporting	
Results Available: 3 weeks	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** <1.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mLs whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum specimens are forwarded to the CDC. The EIA procedure uses the excretory-secretory antigen of T. canis larvae to minimize crossreactivity with Ascaris spp and of other parasites. Results must be interpreted with caution, as broad variations in antibody response occur and levels may remain elevated for years after infection. Generally, antibody levels are highest in visceral larvae migrans (VLM). A Nonreactive result usually rules out infection with Toxocara spp.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86682	**Fees:**

Toxoplasmosis (Serological IgM – Forwarded by TDSHS to CDC for testing)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time:	**Reference Range:** <1.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amt. Required: 2 mL Serum	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: Samples that will be delivered to the laboratory within 8 hours of collection may be transported at room temperature in the original blood collection tube. If the samples are going to be shipped and will be delivered to the laboratory within 48 hours of collection, sera must be separated from the blood and shipped on cold packs, between 2° and 8°C. If the serum samples will not be delivered to the laboratory within 48 hours of collection at these temperatures, then the samples must be frozen at -20°C or lower and shipped on dry ice.	**Storage Instructions:** Separated serum may be held at 2-8°C, or frozen at -20°C.
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, specimens received with extended transit time, or received at incorrect temperature.	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Diagnosis in a newborn requires either a significant rise in toxoplasma IgG level or positive toxoplasma IgM test and IgG titer equivalent to the maternal IgG titer. For serodiagnosis of acute infection in obstetric patients, titers of 1:64 are usually accepted as minimal for IgM, and titers of 1:1024 are minimal for IgG in adults. For ocular Toxoplasmosis, titers as low as 1:16 can be significant, however, the disease is diagnosed clinically. A positive IgM result indicates infection with a high probability the infection occurred within the previous 12 months. In AIDS patients, toxoplasma IgG and IgM antibody levels are low or not detected.	

Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86778	**Fees:**

Toxoplasmosis (Serological – Indirect Fluorescent Antibody (IgG)

Test Includes:	
Reporting	
Results Available: 3-5 days	**Contact #s:**
Reference	
Method: IFA	
Turnaround Time: 3-5 days	**Reference Range:** <1:8 (Nonreacative)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: Samples that will be delivered to the laboratory within 8 hours of collection may be transported at room temperature in the original blood collection tube. If the samples are going to be shipped and will be delivered to the laboratory within 48 hours of collection, sera must be separated from the blood and shipped on cold packs, between 2° and 8°C. If the serum samples will not be delivered to the laboratory within 48 hours of collection at these temperatures, then the samples must be frozen at -20°C or lower and shipped on dry ice.	**Storage Instructions:** Separated serum may be held at 2-8°C, or frozen at -20°C.
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, specimens received with extended transit time, or received at incorrect temperature.	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed twice per week
Diagnostic Information: Diagnosis in a newborn requires either a significant rise in toxoplasma IgG level or positive toxoplasma IgM test and IgG titer equivalent to the maternal IgG titer. For serodiagnosis of acute infection in obstetric patients, titers of 1:64 are usually accepted as minimal for IgM, and titers of 1:1024 are minimal for IgG in adults. For ocular Toxoplasmosis, titers as low as 1:16 can be significant, however, the disease is diagnosed clinically. In AIDS patients, toxoplasma IgG and IgM antibody levels are low or not detected. A single IgG titer is not diagnostic; a four-fold rise in titer between acute and convalescent serum specimens gives meaningful information.	

The test is performed twice per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86777	**Fees:**

Toxoplasmosis (Microscopic – Giemsa Stain)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:** Negative test results indicate that there were no visible parasites in the specimen submitted.
Specimen Requirements	
Specimen Collection: Biopsy	**Sample Type:** Tissue
Volume/Amount Required: small piece of tissue	**Preferred Specimen:** Tissue
Collection/Preservation: Collect a small piece of tissue by biopsy and transport at ambient temperature.	**Storage Instructions:** ambient temperature
Causes for Rejection: Name on container/form do not match, broken in transport	**Sample Container:** Sterile, leak-proof container
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Serological results are normally used to diagnose toxplasmosis. Results of all other procedures must be interpreted in light of the serologic findings. T. gondi identified in histological preparations may not be the causative agent of the symptoms (many individuals harbor the organisms in their tissues but have no symptoms).	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Handle body fluids and tissues using universal precautions
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87177	**Fees:**

Trachoma (Culture – DNA Probe) See also Chlamydia (Genetic Probe)

Test Includes: Gen-Probe Pace 2C, Pace 2 for C. trachomatis, AmpCT (amplified)	
Reporting	
Results Available: 2-3 days	**Contact #s:** (512) 458-7582
Reference	
Method: Genetic probe for rRNA	
Turnaround Time: 3 days	**Reference Range:** Negative for *C. trachomatis*
Limitations: Results dependent on adequacy of sampling. Urine specimens can only be tested using amplified test.	**Interpretation:** Negative results indicate that the patient does not have detectable amounts of *C. trachomatis* rRNA.
Specimen Requirements	
Specimen Collection: Only swabs contained in the PACE specimen collection kit can be use to collect patient specimens.	**Specimen:** female endocervical swab; male urethral swab, conjuctival swab; Urine (amplified only)
Volume/Amount Required: 1 Gen-Probe collector per patient	**Preferred Specimen:** (nonamplified) Female Endocervical Swab; Male urethral Swab; Conjunctival Swab. (amplified) Urine
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection: Wrong name on collection tube, Two swabs in tube, No swab on tube, Wooden swab in tube, Metal swab in tube, Insufficient amount of liquid to test, > 7 days old, > 80 uL of blood.	**Sample Container:** Gen-Probe collection tubes
Sample Test Kit: Gen-Probe Pace 2C, Pace 2 CT	**Availability:** Monday-Friday
Diagnostic Information:	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient temperature	**Shipping Requirements:** In accordance with federal shipping regulations for diagnostic specimens, non-infectious.
Billing	
CPT Code: 87490, 87491	**Fees:**

Trachoma (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available: 3 weeks	**Contact #s:**
Reference	
Turnaround Time: 3 weeks	**Reference Range:** <1:1 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mLs whole blood	**Preferred Specimen:** Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. See Lymphogranuloma Venereum. LGV serology available at CDC. Serology is by prior arrangement only. Once cleared, serum specimens are sent to the CDC. A four-fold rise in titer between acute and convalescent specimens is indicative of infection	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86631, 86632	**Fees:**

Trichinelliasis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available: 3 weeks	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weeks	**Reference Range:** <1.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mLs whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum specimens are forwarded to the CDC. An excretory-secretory antigen is employed to reduce non-specific reactivity; however, cross-reactivity with other parasitic antigen (strongyloides, filarial, malaria) may occur. This cross-reactivity is usually associated with results in the equivocal range.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86784	**Fees:**

Trichinelliasis (Microscopic – Direct)

Test Includes: Microscopic examination	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method: microscopic examination	
Turnaround Time: 3 weeks	**Reference Range:** No parasites found
Limitations:	**Interpretation:** Negative specimen indicates that there were no visible parasites in the specimen submitted.
Specimen Requirements	
Specimen Collection: Biopsy	**Sample Type:** Tissue
Volume/Amount Required: small piece of tissue	**Preferred Specimen:** Tissue
Collection/Preservation: Collect by biopsy a small piece of muscle tissue. Hold at ambient temperature	**Storage Instructions:** Ambient temperature, do not refrigerate or freeze
Causes for Rejection:	**Sample Container:** Sterile, leak-proof container.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: The suspicion of trichinellosis (trichinosis), based on clinical symptoms and eosinophilia, can be confirmed by specific diagnostic tests, muscle biopsy and microscopy.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids and tissues using universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87177	**Fees:**

Trichuriasis (Microscopic – Direct Concentration Exam ID)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:** Negative specimen indicates that there were no visible parasites in the specimen submitted.
Specimen Requirements	
Specimen Collection: Feces	**Sample Type:** Feces, worms
Volume/Amount Required: 15 mL liquid stool, or 15 g stool	**Preferred Specimen:** Feces; Worm
Collection/Preservation: Collect stool in a clean, dry container. Immediately transport to formalin preservative.	**Storage Instructions:** Formalin preservative
Causes for Rejection: Unpreserved stool > 5 hours old.	**Sample Container:** Formalin transport for parasites
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Fecal specimens must be sent in fresh (less that five hours) and in formalin. Adult worm can be submitted for identification in ETOH or in 10 % formalin. Referred material accepted from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions. Formalin is a poison, handle with care.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87015	**Fees:**

Trypanosomiasis (Culture)

Test Includes: Microscopic examination	
Reporting	
Results Available: 1-3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 3 days	**Reference Range:** No parasite seen
Limitations:	**Interpretation:** Negative specimen indicates that there were no visible parasites in the specimen submitted.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Whole blood, green or purple top tube.
Volume/Amount Required: 20 mL whole blood	**Preferred Specimen:** Whole Blood – green or purple top
Collection/Preservation: Collect by venipuncture blood in a green or purple top vacutainer. Hold at ambient temperature.	**Storage Instructions:** ambient temperature
Causes for Rejection: Incorrect collection tube used.	**Sample Container:** green or purple top vacutainer
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: See also Chagas' Disease.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87081	**Fees:**

Trypanosomiasis (Microscopic – Direct Giemsa stained)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic examination	
Turnaround Time: 3 days	**Reference Range:** No parasites found
Limitations:	**Interpretation:** Negative specimen indicates that there were no visible parasites in the specimen submitted.
Specimen Requirements	
Specimen Collection: venipuncture, biopsy, needle aspirates	**Sample Type:** blood, lymph node, aspirates
Volume/Amount Required: 10 mL whole blood; small piece of lymph node tissue; > 1mL aspirate	**Preferred Specimen:** Blood thin and thick smears; Lymph Node; Aspirates
Collection/Preservation: Collect by venipuncture or capillary blood, blood to prepare two thick and two thin smears on a glass slide. Store at ambient temperature	**Storage Instructions:** Ambient temperature
Causes for Rejection:	**Sample Container:** Green or Purple top vacutainer
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: See also Chagas' Disease.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87177	**Fees:**

Tuberculosis (Culture - Isolation)

Test Includes: Isolation of mycobacteria and identification to species level	
Reporting	
Results Available: Positive cultures 14-21 days or earlier; Negative cultures 43 days	**Contact #s:** 512-458-7586 or 512-458-7318 ext 2687
Reference	
Method: Primary identification test is mycolic acid analysis by high performance liquid chromatography	
Turnaround Time: Negatives held for 6 weeks	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Sputum; Tissue; Exudate; Urine; Stool; Blood; Body Fluids
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen, unless blood.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline. Gastric specimens must be neutralized prior to transport. Refrigerated blood specimens will be rejected.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL sterile saline to tissue if needed to maintain moisture during transport. If blood, must collect in Yellow-top vacutainer with SPS.
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday-Friday
Diagnostic Information: Primary diagnostic specimens and isolates go to TDSHS Laboratory in Austin. Direct HPLC (presumptive identification only) performed on positive AFB smear initial diagnostic specimens. Nucleic acid amplification testing for M. tuberculosis complex may be performed on positive AFB smear initial pulmonary specimens if Direct HPLC testing is inconclusive. For more information telephone 512-458-7342.	
Specimen **Submission**	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87143, 87149, 87118	**Fees:**

Tuberculosis (Culture - Identification)

Test Includes: Identification of isolate by mycolic acid analysis; biochemical testing and/or Accuprobe culture confirmation test performed as adjunct tests if necessary	
Reporting	
Results Available: 2-25 days	**Contact #s:** 512-458-7586
Reference	
Method: Primary identification test is mycolic acid analysis by high performance liquid chromatography.	
Turnaround Time: 2-25 days M. tuberculosis complex reports are telephoned to the submitter on previously undiagnosed patients.	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained
Sample Test Kit:	**Availability:**
Diagnostic Information: Pure culture isolates submitted to this Laboratory for definitive identification and drug susceptibilities. Molecular typing performed at regional center upon request. Definitive identification performed on positive isolates by HPLC or a combination of HPLC and biochemical testing or HPLC and genetic probe confirmation. For more information telephone 512-458-7342	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87556	**Fees:**

Tuberculosis (Culture – Susceptibility, Primary Drug Panel)

Test Includes: Drug Susceptibility Testing of Mycobacterium tuberculosis by Indirect Drug Susceptibility Test	
Reporting	
Results Available: 10-28 days	**Contact #s:** 512-458-7586
Reference	
Method: BACTEC indirect drug susceptibility test system for M. tuberculosis complex. Agar proportion indirect drug susceptibility test system for confirmation of drug resistance.	
Turnaround Time: 10-28 days. Reports of drug resistance are telephoned to the submitter.	**Reference Range:** Susceptible
Limitations: Testing can only be performed on pure cultures of Mycobacterium tuberculosis complex.	**Interpretation:** Report states isolate is either susceptible or resistant to a specific drug at critical concentrations recommended by NCCLS.
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative.	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained.
Sample Test Kit:	**Availability:** Test is set up 5 days/week: Monday-Friday. Test is run 7 days/week.
Diagnostic Information: Pure culture isolates of M. tuberculosis complex submitted or isolated at this Laboratory for drug susceptibilities. Isolates submitted for drug susceptibilities will be identified by this Laboratory. No fee will be charged for the identification test unless the AFB ID test is requested on form G-2B. Primary Panel for M. tuberculosis complex consists of Isoniazid, Ethambutol, and Rifampin by BACTEC susceptibility testing. Resistance to any of these drugs is confirmed by the agar proportion method.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87190, 87188	**Fees:**

Tuberculosis (Culture – Susceptibility, Secondary Drug Panel)

Test Includes: Drug Susceptibility Testing of Mycobacterium tuberculosis by Indirect Drug Susceptibility Test	
Reporting	
Results Available: 10-28 days	**Contact #s:** 512-458-7586
Reference	
Method: BACTEC indirect drug susceptibility test system for M. tuberculosis complex. Agar proportion indirect drug susceptibility test system for confirmation of drug resistance.	
Turnaround Time: 10-28 days Reports of drug resistance are telephoned to the submitter.	**Reference Range:** Susceptible
Limitations: Testing can only be performed on pure cultures of Mycobacterium tuberculosis complex.	**Interpretation:** Report states isolate is either susceptible or resistant to a specific drug at critical concentrations recommended by NCCLS.
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative.	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained.
Sample Test Kit:	**Availability:** Test is set up 5 days/week: Monday-Friday. Test is run 7 days/week.
Diagnostic Information: Pure culture isolates of M. tuberculosis complex submitted or isolated at this Laboratory for drug susceptibilities. Isolates submitted for drug susceptibilities will be identified by this Laboratory. No fee will be charged for the identification test unless the AFB ID test is requested on form G-2B. Secondary Panel for M. tuberculosis complex consists of Streptomycin, Ethionamide, Kanamycin, Pyrazinamide, and Ofloxacin by BACTEC susceptibility testing. Resistance to any of these drugs is confirmed by the agar proportion method. Capreomycin is available by agar proportion method only.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87190, 87188	**Fees:**

Tuberculosis (Culture – Susceptibility, Pyrazinamide Only)

Test Includes: Drug susceptibility testing of Mycobacterium tuberculosis complex to pyrazinamide.	
Reporting	
Results Available: 7-28 days	**Contact #s:** 512-458-7586
Reference	
Method: BACTEC indirect drug susceptibility test system	
Turnaround Time: 7-28 days. Reports of drug resistance are telephoned to the submitter.	**Reference Range:** By report
Limitations: Test can only be performed on pure cultures of M. tuberculosis complex.	**Interpretation:** Report states that the isolate is either susceptible or resistant to pyrazinamide at critical concentration recommended by NCCLS.
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation: No preservative.	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained.
Sample Test Kit:	**Availability:** Test is set up 5 days/week: Monday-Friday. Test is run 7 days/week.
Diagnostic Information: Pure culture isolates of M. tuberculosis complex submitted or isolated at this Laboratory for drug susceptibilities. Isolates submitted for drug susceptibilities will be identified by this Laboratory. No fee will be charged for the identification test unless the AFB ID test is requested on form G-2B. Pyrazinamide testing is performed by BACTEC susceptibility testing.	
Specimen **Submission**	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87188	**Fees:**

Tuberculosis (Culture – Isolation - Direct M tuberculosis Genetic Probe)

Test Includes: Nucleic Acid Amplification Testing of Clinical Specimens by MTD Test	
Reporting	
Results Available: 2-5 days	**Contact #s:** 512-458-7586
Reference	
Method: Gen-Probe MTD Test; test amplifies and detects ribosomal RNA of M. tuberculosis complex	
Turnaround Time: 2-5 days. Positive reports are telephoned to the submitter.	**Reference Range:** By Report
Limitations: Test can only be run on undiagnosed, untreated patients on processed non-bloody pulmonary specimens. A negative test does not mean the patient does not have M. tuberculosis disease. All tests must be confirmed by culture of specimen for the presence of mycobacteria.	**Interpretation:** A Positive MTD test means that the probe detected ribosomal RNA of the M. tuberculosis complex in the clinical specimen.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical pulmonary specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Sputum; Bronchial Washings Specimen can not be bloody
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. Specimen must be shipped cold.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Specimens from treated and diagnosed patients will be rejected for MTD analysis.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container.
Sample Test Kit:	**Availability:** MTD by special request. Please telephone 512-458-7342.
Diagnostic Information: Primary diagnostic specimens and isolates go to TDSHS Laboratory in Austin. Nucleic acid amplification testing for M tuberculosis complex on positive AFB smear primary pulmonary diagnostic specimens only.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ship cold.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87149	**Fees:**

Tuberculosis (Microscopic – Truant's Stain)

Test Includes: Microscopic Examination of Clinical Specimen for Acid Fast Bacilli (AFB)	
Reporting	
Results Available: 1 day. Positive reports are phoned to the submitter within 2 hours of availability.	**Contact #s:** 512-458-7586
Reference	
Method: Truant's Acid Fast Stain	
Turnaround Time: 24 hours	**Reference Range:** Negative
Limitations: A negative microscopic examination does not mean that the patient's specimen cannot be culture positive for AFB. This test is less sensitive than culture. The stain utilizes a fluorescent dye that can be taken up by the mycobacterium to different degrees depending on the species or if the patient is on antibiotic treatment. The quality of the specimen has major impact on the results of the microscopic examination.	**Interpretation:** The report states whether the test is Negative if No AFB are Seen or Positive if AFB are Seen on microscopic examination. If Positive, the report provides a quantitation to indicate how many AFB were seen in a high power field under the microscope. Occasionally, an examination will result in the observation of only one or two AFB in the entire test. This number of AFB (one or two) is reported but is not considered a positive result by CDC or the American Thoracic Society.
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Sputum; Tissue; Exudate; Stool; Blood; Body Fluids; Urine
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen, unless blood. This is important if the specimen is also to be cultured.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline. If swabs are submitted in transport medium, the test cannot be performed. Blood specimens less than 5 mL are unacceptable.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL sterile saline to tissue if needed to maintain moisture during transport. If blood, must collect in Yellow-top vacutainer with SPS.
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday-Friday
Diagnostic Information: Primary diagnostic specimens and isolates go to TDSHS Lab in Austin.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.

Billing	
CPT Code: 87206	**Fees:**

Tuberculosis (Culture – DNA Fingerprinting)

Test Includes:	
Reporting	
Results Available: approx. 10 business days	**Contact #s:** 512-458-7342 or 512-458-7580
Reference	
Method:	
Turnaround Time: As directed	**Reference Range:** By report
Limitations: Test can only be performed on pure cultures of M. tuberculosis complex.	**Interpretation:** contact Tuberculosis Elimination Program for guidance
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:** Triple-contained.
Sample Test Kit:	**Availability:**
Diagnostic Information: DNA Fingerprinting of M. tuberculosis is available at no charge from a reference laboratory. Please submit pure cultures of M. tuberculosis to this Laboratory and mark "Other" on the request form. Write the word "Genotyping" in the space for "other" tests. For more information, telephone 512-458-7342.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: ambient	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code:	**Fees:** none

Tularemia (Culture - Isolation)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 7-21 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Culture; Blood Culture; Tissue; Lymph Node
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: See Aerobic Bacterial Culture (Isolation) Culture for isolation must be held 21 days before the specimen can be reported as negative. Francisella tularensis is one of the agents designated as a Bioterrrorism agent. It sporadically occurs naturally. See Bioterrorism agents (Clinical -Isolation).	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: 4º C, ice packs, NO dry ice.	**Shipping Requirements:**
Billing	
CPT Code: 87040, 87046, 87070	**Fees:**

Tularemia (Culture - Identification)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 7-14 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture safely contained.
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Francisella tularensis is one of the agents designated as a Bioterrrorism agent. It sporadically occurs naturally. See Bioterrorism agents (Clinical -Isolation) For Referred cultures see Aerobic Bacterial Culture, (Identification).	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code: 87077	**Fees:**

Tularemia (Serological - Agglutination)

Test Includes:	
Reporting	
Results Available: 5-7 days	**Contact #s:**
Reference	
Method: Agglutination	
Turnaround Time: 5-7 days	**Reference Range:** <1:80 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum; Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed once per week
Diagnostic Information: Tularemia antibody begins to appear 2-3 weeks post-onset and generally peaks 5 weeks into the disease. A titer of 1:320 or greater is significant. Serum specimens are to be collected at least 7 days apart. Fourfold titer increase is evidence of current infection. Cross-reactions occur with Brucella species. Telephone Laboratory prior to shipping specimen. The test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86609	**Fees:**

Typhus (Serological – Immunofluorescence)

Related Agents: Rickettsia, Murine typhus

Reporting	
Results Available: 3-5 days	**Contact #s:**
Reference	
Method: IFA	
Turnaround Time: 3-5 days	**Reference Range:** <1:64 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed twice per week
Diagnostic Information: The rickettsial micro IFA test is a standard two-step sandwich immunofluorescence technique. In the first stage the Rickettsia typhi (murine typhus) antigen is overlaid with dilutions of human serum. In the second stage, the antigen is overlaid with a fluorescein-conjugates antihuman globulin, so that the antigens are rendered fluorescent by positive sera. The most convincing evidence of recent rickettsiae infection of a four-fold rise in titer between the acute serum and the convalescent serum. Single titers of 1:128 are considered the minimum for significant titers. Serum specimens must be collected 14 days apart. The test is performed twice per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.
Billing	
CPT Code: 86757	**Fees:**

Urethritis (Culture – Isolation)

(For clinical culture studies see Gonorrhea Culture (Isolation) For probe testing, see Gonorrhea (Culture – Genetic Probe)

Test Includes: Culture, Conventional biochemicals	
Reporting	
Results Available: 3-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: Culture, Conventional biochemicals	
Turnaround Time: 3-10 days	**Reference Range:** Negative for N. gonorrhoeae
Limitations: organism must be viable	**Interpretation:**
Specimen Requirements	
Specimen Collection: urethral	**Sample Type:** urethral swab, endocervical swab
Volume/Amount Required:	**Preferred Specimen:** urethral swab, endocervical swab
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: For clinical culture studies see Gonorrhea Culture (Isolation) For probe testing, see Gonorrhea (Culture – Genetic Probe).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: 87070, 87590, 87591	**Fees:**

Varicella (Culture – Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-458-7594
Reference	
Method: Cell culture	
Turnaround Time: 2-14 days	**Reference Range:** No virus isolated
Limitations:	**Interpretation:** A result of "No virus isolated" does not necessarily mean absence of disease. The success of virus isolation depends a great deal on the submission of the proper specimen, collected at the right time, and shipped with the least possible delay.
Specimen Requirements	
Specimen Collection: Specimens should be collected at an appropriate anatomic site and at the proper time after infections because viruses are generally shed for only a short period of time. Refer to Specimen Collection by Type table for additional instructions.	**Sample Type:** See preferred specimen
Volume/Amount Required: Swab in 1-2 mL of viral transport media.	**Preferred Specimen:** Vesicle fluid, Skin scrapings
Collection/Preservation: Viral transport media	**Storage Instructions:** Maintain specimens at 2-8°C immediately after collection. Ship with the least possible delay. If storage is necessary, freeze at -70° C.
Causes for Rejection: Specimens submitted on a preservative such as formalin.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Isolation is done in conventional tube culture and shell vial culture. If characteristic CPE is observed in the tube culture or after a 5-7 day incubation of the shell vial culture, immunofluorescence tests are performed using VZ-specific monoclonal antibody.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: 2-8° C, overnight	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252	**Fees:**

Varicella (Culture – Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-458-7594
Reference	
Method: Immunofluorescence	
Turnaround Time: 2-14 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required: Fill monolayer tube with media if transporting at ambient temperature. If transporting on dry ice, send 1-2 mLs.	**Preferred Specimen:** Cell culture isolate with CPE.
Collection/Preservation:	**Storage Instructions:** If shipment of isolate will be delayed, store isolate at -70° C.
Causes for Rejection:	**Sample Container:** Cell culture tube or sterile cryovial.
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Identification is based on immunofluorescence test using VZV-specific monoclonal antibody.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:**
Transport Temperature: Monolayer with CPE: Ambient temperature. Frozen isolate: on dry ice	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87253	**Fees:**

Varicella (Serological – Enzyme Immunoassay)

Test Includes:	
Reporting	
Results Available: 5-7 days	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 5-7 days	**Reference Range:** <1.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Paired Sera
Collection/Preservation: Samples that will be delivered to the laboratory within 8 hours of collection may be transported at room temperature in the original blood collection tube. If the samples are going to be shipped and will be delivered to the laboratory within 48 hours of collection, sera must be separated from the blood and shipped on cold packs, between 2° and 8°C. If the serum samples will not be delivered to the laboratory within 48 hours of collection at these temperatures, then the samples must be frozen at -20°C or lower and shipped on dry ice.	**Storage Instructions:** Separated serum may be held at 2-8°C, or frozen at -20°C.
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing, specimens received with extended transit time, or received at incorrect temperature.	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed once per week
Diagnostic Information: A single positive IgG indicates a history of past infection with varicella-zoster virus (VZV), and is detectable for life. Serum specimens are to be collected 10-14 days apart. A significant rise in antibody level between acute and convalescent specimens is evidence of current infection. Test is performed once per week.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions

Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86787	**Fees:**

Vibrio parahaemolyticus and other Vibrio species (Culture – Identification)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 4-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: conventional biochemical	
Turnaround Time: 4-7 Days	**Reference Range:** By Report
Limitations: Organism must be viable for biochemical studies	**Interpretation:** By Report
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure Culture
Volume/Amount Required: one specimen per patient	**Preferred Specimen:** Pure Culture on agar slant
Collection/Preservation:	**Storage Instructions:** ambient temperature, never refrigerate or freeze
Causes for Rejection: Name on tube/form do not match, broken in transport	**Sample Container:** Agar slant in screw cap tube.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Pure cultures should not be refrigerated. See Vibrio cholerae (Culture-Identification)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Vibrio cholerae, (Culture – Identification)

Test Includes: Conventional biochemicals, serological typing	
Reporting	
Results Available: 4-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: conventional biochemicals, slide agglutination	
Turnaround Time: 4-7 days	**Reference Range:** By report
Limitations:	**Interpretation:** Identification of *Vibrio cholerae* should always be considered significant.
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure Culture
Volume/Amount Required: one specimen per patient	**Preferred Specimen:** Pure Culture on agar slant
Collection/Preservation:	**Storage Instructions:** Ambient temperature, do not refrigerate or freeze
Causes for Rejection: Name on tube/form do not match, broken in transport.	**Sample Container:** Agar slant in screw cap tube
Sample Test Kit:	**Availability:** Monday-Friday Outbreak investigations with prior notification: Saturday-Sunday
Diagnostic Information: Pure cultures should **NOT** be refrigerated. Vibrio cholerae will be serotyped for O1 and O139 serotypes. Requests for Toxin testing are forwarded to CDC. Prior approval must be secured before submitting culture.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, Biosafety level 2
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code:	**Fees:**

Vibrio cholerae, (Toxin Studies)

Test Includes: Test not performed at TDSHS, Specimens submitted to the CDC with prior approval.	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: Dependent on CDC report	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture, safely contained
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Pure cultures should **NOT** be refrigerated. Requests for Toxin testing are forwarded to CDC. Prior approval must be secured before submitting culture. For Molecular analysis, see Molecular typing (PFGE) Reference Range	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, biosafety level 2
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Vibrio cholerae and other Vibrio species (Isolation)

Test Includes: conventional biochemicals, serological typing	
Reporting	
Results Available: 3-7 days	**Contact #s:** (512) 458-7582
Reference	
Method: Conventional biochemicals, slide agglutination	
Turnaround Time: 3-7 days	**Reference Range:** No Vibrio species isolated.
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection: stool	**Sample Type:** stool
Volume/Amount Required: >10 g	**Preferred Specimen:** stool in Cary-Blair transport medium
Collection/Preservation: Collect stool in clean, dry container. Transfer to a Cary-Blair if in transport > 24 hours.	**Storage Instructions:** 2-8° C, Do not ship on dry ice.
Causes for Rejection:	**Sample Container:** Cary-Blair transport tube or leak-proof container.
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: See aerobic bacterial culture, stool. Pure cultures should NOT be refrigerated. Requests for Toxin testing are forwarded to CDC. Prior approval must be secured before submitting culture. For Molecular analysis, see Molecular typing (PFGE)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions
Transport Temperature: Wet Ice (Ice packs)	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87046	**Fees:**

Virulence Factors - (PCR)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 7-11 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture, safely contained
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: PCR is performed at TDSHS for the virulence factor genes for detection of pathogenic Escherichia coli including heat stable and labile toxin, shiga toxin, invasion plasmid antigen, attaching and effacing gene and hemolysin. PCR may be performed from pure cultures or from original plating media used in stool screens. For typing see Escherichia coli 0157:H7 or other Shiga toxin E. coli Culture (Typing) For toxin testing see Escherichia coli 0157:H7 or other Shiga toxin E. coli (Toxin Testing).	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:**
Billing	
CPT Code:	**Fees:**

Water Testing, Bacteriological (Culture – Coliform)

Test Includes: Colilert 18 hour (See Coliform- Total Colilert)	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method: MUG fluorescent	
Turnaround Time: 1 day	**Reference Range:** Negative for coliforms
Limitations: Water must be received within 30 hours of collection.	**Interpretation:** Negative test result indicates that there were no detectable coliforms in the sample submitted. The test does not detect an overall bacterial count or rule out other types of bacteria in the sample.
Specimen Requirements	
Specimen Collection: In accordance with the package insert with collection bottle.	**Sample Type:** Water
Volume/Amount Required: 100 mL	**Preferred Specimen:** Water
Collection/Preservation:	**Storage Instructions:** ambient temperature, < 30 hours old.
Causes for Rejection: > 30 hours old.	**Sample Container:** Leak proof container supplied by TDSHS.
Sample Test Kit: Colilert 18 hour	**Availability:** Monday- Sunday. Specimen must be received by 11 a.m on weekend to be tested that day.
Diagnostic Information: Samples must be from portable water source in approved sample container and submitted within 30 hours. Fee for service is charged. See Coliform.	
Specimen Submission	
Required Request Form: G-79	**Specimen Handling:** According to package insert with collection bottle.
Transport Temperature: ambient	**Shipping Requirements:** Within 30 hours of collection.
Billing	
CPT Code: none	**Fees:**

Water Testing, Bacteriological (Culture – Total Coliform)

Test Includes: See Coliform- Total Colilert	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Water
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Samples must be from portable water source in approved sample container and submitted within 30 hours. Fee for service is charged. See Coliform.	
Specimen Submission	
Required Request Form: G-79	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: none	**Fees:**

Water Testing, Bacteriological (Culture – E. coli – Presence/Absence)

Test Includes: See Coliform- Total Colilert	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time:	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Water
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Samples must be from portable water source in approved sample container and submitted within 30 hours. Fee for service is charged. Enumeration no longer done. See Coliform.	
Specimen Submission	
Required Request Form: G-79	**Specimen Handling:**
Transport Temperature:	**Shipping Requirements:**
Billing	
CPT Code: none	**Fees:**

Water Testing, Cryptosporidia & Giardia MPA (Micro particulate analysis (Microscopic – Direct Exam IFA)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** (512) 458-7560
Reference	
Method:	
Turnaround Time: 5 days	**Reference Range:**
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Water filter
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Specimens accepted only through TCEQ.	
Specimen Submission	
Required Request Form: G-79	**Specimen Handling:**
Transport Temperature: On Ice Packs	**Shipping Requirements:**
Billing	
CPT Code: none	**Fees:**

Western Equine Encephalitis (Serological – Forwarded by TDSHS to CDC for testing)

Reporting	
Results Available:	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time:	**Reference Range:** <2.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system. May be cross reactivity with other arthropod borne viruses.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Paired Sera; Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** As **requested**
Diagnostic Information: The presence of IgM indicates recent infection. Human infections are seasonal, from mid- to late-summer, occurring throughout the western United States. Serological cross-reactions occur with Venezuelan and Eastern Equine Encephalitis. While a single serum may be tested, a second specimen collected 10-14 days apart may be required for best evidence of recent infection.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86654	**Fees:**

West Nile Virus Encephalitis (Serological – Enzyme Immunoassay– IgG and IgM)

Related Agents: Arbovirus

Test Includes:	
Reporting	
Results Available: 1-3 days	**Contact #s:**
Reference	
Method:	
Turnaround Time: 1-3 days	**Reference Range:** <2.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system. May be cross reactivity with other arthropod borne viruses.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:**
Volume/Amount Required: 2 mL Serum	**Preferred Specimen:** Paired Sera; Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:** Test performed daily
Diagnostic Information: West Nile Virus is a flavivirus recently associated with an outbreak of encephalitis in the Eastern United States. West Nile Virus IgM is usually detectable by the time symptoms appear, but IgG may not be detectable until day 4 or day 5 of illness. Antibodies induced by West Nile Virus infection show extensive crossreactivity with other flaviviruses, including Dengue Fever Virus and St. Louis Encephalitis Virus.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Cold (2-8º C) on ice packs if received within 48 hours from time of collection. Frozen (≤-20°) on dry ice if received more than 48 hours from time of collection.	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86790	**Fees:**

Worm, Miscellaneous Identification (Microscopic – Direct Concentration)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 458-7560
Reference	
Method: Microscopic Examination	
Turnaround Time: 3 days	**Reference Range:** Specimen was not a worm
Limitations:	**Interpretation:** By Report
Specimen Requirements	
Specimen Collection: worm, Feces	**Sample Type: Worm**
Volume/Amount Required: One Worm	**Preferred Specimen:** Worm (whole) in alcohol
Collection/Preservation: Place worm in ethyl alcohol	**Storage Instructions:** Ambient Temperature
Causes for Rejection:	**Sample Container:** Clean, leak-proof container; formalin transport for parasites.
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: Fecal specimens must be sent in fresh (less than five hours) or in formalin. Adult worms should be submitted in ethyl alcohol. Referred material accepted from hospital, private, and reference labs.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions.
Transport Temperature: Ambient (Room) temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87015	**Fees:**

Yellow Fever (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available: 3 weeks	**Contact #s:**
Reference	
Method: EIA	
Turnaround Time: 3 weeks	**Reference Range:** <2.00 (Nonreactive)
Limitations: May not detect a recent infection, or infection in a person with a severely compromised immune system.	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mLs whole blood	**Preferred Specimen:** Paired Sera
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8°C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. Serum specimens are to be collected at least 14 days apart, and will be submitted to the CDC when accompanied by immunization, travel, and clinical history. A fourfold titer increase is evidence of current infection. Cross-reactions occur with Dengue Fever and immunization.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8°C (refrigerated) or -20°C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8°C), or frozen (-20°C) and mailed on dry ice.
Billing	
CPT Code: 86790	**Fees:**

Yersinia pestis (Culture – Isolation)

Test Includes:	
Reporting	
Results Available:	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3-10 days	**Reference Range:** None isolated
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Blood, bubo aspiration, sputum, throat swabs, CSF; Swabs in Cary-Blair transport at autopsy: blood, tissue specimens from spleen, liver, lungs, buboes.
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection:	**Sample Container:**
Sample Test Kit:	**Availability:**
Diagnostic Information: Telephone Laboratory (512-458-7582) prior to shipping specimen. Cultures must be held for 14 days before reporting as negative. Local and State health authorities must be immediately notified of suspected and presumptive cases of plague. Yersinia pestis is a pathogen in biohazard risk group III and should be handled in a containment laboratory. Blood cultures should be taken (at least 3 in a 24 hour period). Stains of clinical material using Giemsa, Wright, or Wayson stains show small rods with bipolar "safety pin" staining. Yersinia pestis is one of the agents listed on the Bioterrorism agents list. See Bioterrorism agents (Clinical -Isolation) and Bioterrorism agents (Referred Identification - PCR)	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: 4ºC , ice packs	**Shipping Requirements:**
Billing	
CPT Code: 87070	**Fees:**

Yersinia enterocolitica (Culture – Isolation)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 4-14 days	**Contact #s:** (512) 458-7582
Reference	
Method: conventional biochemicals	
Turnaround Time: 4-14 days	**Reference Range:** No Yersinia species isolated.
Limitations:	**Interpretation:** By report
Specimen Requirements	
Specimen Collection: feces	**Sample Type:** Feces in enteric transport media; Blood
Volume/Amount Required: 10 g stool or 10 mL liquid stool	**Preferred Specimen:** Feces in enteric transport media; Blood
Collection/Preservation: Collect stool in dry, clean container. Transfer to enteric transport.	**Storage Instructions:** 2-8° C
Causes for Rejection:	**Sample Container:** Enteric transport
Sample Test Kit:	**Availability:** Monday-Friday Outbreak investigations with prior notification: Saturday-Sunday
Diagnostic Information: Intestinal yersiniosis may present in three clinical forms: enteritis, terminal ileitis or mesenteric lymphadenitis causing "pseudoappendicitis", and septicemia.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Handle body fluids using universal precautions
Transport Temperature: 2-8º C	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for diagnostic specimens.
Billing	
CPT Code: 87046	**Fees:**

Yersinia enterocolitica (Culture – Identification)

Test Includes: conventional biochemicals	
Reporting	
Results Available: 4-10 days	**Contact #s:** (512) 458-7582
Reference	
Method: conventional biochemicals	
Turnaround Time: Identification 4-7 days. Serotyping: dependent on CDC report	**Reference Range:** By report
Limitations:	**Interpretation:** By report
Specimen Requirements	
Specimen Collection:	**Sample Type:** Pure culture
Volume/Amount Required: one specimen per patient	**Preferred Specimen:** Pure Culture on agar slant
Collection/Preservation:	**Storage Instructions:** ambient temperature
Causes for Rejection:	**Sample Container:** Agar slant in screw cap tube
Sample Test Kit:	**Availability:** Monday-Friday
Diagnostic Information: Strains of *Y. entercolitica* can be characterized by their biotypes but any requests for serotyping of Yersinia enterocolitica are submitted to the CDC with prior approval. Please call the Clinical Bacteriology Section, (512-568-7582) before submitting for serotyping. Complete clinical information must be included with the specimens submitted for serotyping.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Infectious agent, biosafety level 2
Transport Temperature: Ambient temperature	**Shipping Requirements:** Triple contained in accordance with federal shipping regulations for infectious agents.
Billing	
CPT Code: 87077	**Fees:**

Zygomycosis (Culture – Isolation)

Names of Related Agents: Rhizopus species, Mucor species, Syncephalastrum species, etc.

Test Includes: Isolation of fungus and identification by morphological tests	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-458-7455 for prior approval Technical questions: 512-458-7586
Reference	
Method: Slide culture	
Turnaround Time: 21-28 days	**Reference Range:** Negative
Limitations: Delay in transport of specimen could compromise isolation of organism.	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:** Clinical Specimen
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Tissue; Sputum; Scrapings
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. If transport is delayed over one hour, refrigerate specimen.
Causes for Rejection: Specimens received frozen, in formalin, or in culture medium will be rejected. Swabs are discouraged unless the only specimen available; submit swabs in 5 mL sterile saline.	**Sample Container:** Triple-contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container. Add up to 10 mL sterile saline to tissue if needed to maintain moisture during transport.
Sample Test Kit:	**Availability:** Testing available upon approval by Dr. Penfield.
Diagnostic Information: Approval for this testing must be obtained prior to shipping by telephoning Dr. Susan Penfield at 512-458-7455.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Ambient acceptable but 2-8º C preferred for non-sterile specimens.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens.
Billing	
CPT Code: 87101, 87102, 87103	**Fees:**

Zygomycosis (Culture – Identification)

Names of Related Agents: Rhizopus species, Mucor species, Syncepalastrum species, etc.

Test Includes: Identification of fungus by morphological tests	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-458-7586
Reference	
Method: Slide culture	
Turnaround Time: 21-28 days	**Reference Range:** By report
Limitations:	**Interpretation:**
Specimen Requirements	
Specimen Collection:	**Sample Type:**
Volume/Amount Required:	**Preferred Specimen:** Pure Culture
Collection/Preservation:	**Storage Instructions:**
Causes for Rejection: Culture infested with mites.	**Sample Container:** Triple-contained.
Sample Test Kit:	**Availability:** Tested 5 days/week: Monday-Friday
Diagnostic Information: Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Drug susceptibility testing on these organisms not available at TDSHS laboratory.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:**
Transport Temperature: Room temperature	**Shipping Requirements:** Triple-contained and packaged to meet rigorous performance tests as outlined in the DOT, USPS, PHS, and IATA regulations for shipping of infectious substances.
Billing	
CPT Code: 87101, 87102, 87103	**Fees:**

Zygomycosis (Serological – Forwarded by TDSHS to CDC for testing.)

Test Includes:	
Reporting	
Results Available: 3 weeks	**Contact #s:**
Reference	
Method:	
Turnaround Time: 3 weks	**Reference Range:** Nonreactive
Limitations:	**Interpretation:** Nonreactive indicates that the patient does not have detectable antibody to the infectious agent. Reactive indicates that the patient has detectable antibody to the infectious agent, and depending on the clinical picture, may have a current or past infection.
Specimen Requirements	
Specimen Collection: Venipuncture	**Sample Type:** Serum
Volume/Amount Required: 10 mLs whole blood	**Preferred Specimen:** Single Serum
Collection/Preservation: Red top or tiger top tube	**Storage Instructions:** Do not freeze or refrigerate whole blood. Separated serum may be held at 2-8° C
Causes for Rejection: Discrepancy between name on tube and name on form, insufficient quantity of serum for testing	**Sample Container:** Red top or tiger top tube
Sample Test Kit:	**Availability:**
Diagnostic Information: Prior notification is requested (512) 458-7760. A detailed patient history is required. Serum specimens are forwarded to the CDC for experimental tests.	
Specimen Submission	
Required Request Form: G-2A	**Specimen Handling:** Use Universal Precautions
Transport Temperature: Ambient temperature for specimens on the blood clot, separated serum at 2-8° C (refrigerated) or -20° C (frozen).	**Shipping Requirements:** Triple contain, separated serum may be shipped on cold packs (2-8° C), or frozen (-20° C) and mailed on dry ice.
Billing	
CPT Code: 86671	**Fees:**