TEXAS
Department of State Health Services

Laboratory Services Section

Laboratory Testing Services Manual

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Zygomycosis (Serological – Forwarded by TDSHS to CDC for testing.) 516

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) 776-7318 or FAX (512) 776-7294. Thank you for your continued support.

Sincerely,

Grace Kubin, Ph.D.
Director,
Laboratory Services Section

Telephone Numbers and Administrative Contact Info

Rabies Notification: 1-800-252-8163

Laboratory Reporting for:	Telephone	Fax
Environmental Texas Health Steps (EPSDT), Microbiology, Newborn Screening	(512) 776-7587 (512) 776-7578	(512) 776-7757 (512) 776-7533
Specimen/Sample Acquisition:	(512) 776-7598	(512) 776-7510
Laboratory Accounting:	(512) 776-7317	(512) 776-7588
Administrative Staff		
Grace Kubin, Ph.D Director, Laboratory Services Section	(512) 776-2300 FAX (512) 776-7294 grace.kubin@dshs.state.tx.us	
Susan Tanksley, Ph.D. Director, Laboratory Operations Unit	(512) 776-3106 FAX (512) 776-7406 susan.tanksley@dshs.state.tx.us	
Sherry Clay, M.A. Director, Quality Assurance Unit	(512) 776-7318 FAX (512) 776-7294 sherry.clay@dshs.state.tx.us	
Carl Hogberg Manager, Environmental Sciences Branch	(512) 776-2429 FAX (512) 776-7757 carl.hogberg@dshs.state.tx.us	
Elizabeth Delamater, Ph.D. Manager, Microbiological Sciences Branch	(512) 776-7592 FAX (512) 776-7452 elizabeth.delamater@dshs.state.tx.us	
Lisa Simpson Manager, Specimen Aquisition Branch	(512) 776-2323 FAX (512) 776-7510 lisa.simpson@dshs.state.tx.us	
Rachel Lee, Ph.D. Manager, Biochemistry & Genetics Branch	(512) 776-7430 FAX (512) 776-7221 rachel.lee@dshs.state.tx.us	
Aurora Martinez, MT(ASCP), B.S. South Texas Laboratory (Branch)	(956) 364-8748 FAX (956) 412-8794 aurora.martinez@dshs.state.tx.us	

Local Health Department Laboratories

Local Health Dept.	Main Telephone	Lab Telephone	Fax
Abilene-Taylor CO Public Health Dist 850 N 6th Abilene, Texas 79601	(325) 692-5600		(325) 734-5370
Austin Dept of HHS 15 Waller St Austin, Texas 78702	(512) 972-5421		(512) 972-5451
Brazos County Health Dept 201 North Texas Ave Bryan, Texas 77803-5317	(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	(361) 826-7200	(361) 826-7213	(361) 826-7217
Dallas CO Dept Health & Human Svcs 2377 N Stemmons Freeway Dallas, Texas 75207	(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	(915) 771-5701	(915) 543-9984	(915) 546-9034
Greenville-Hunt CO Health Dept 2700 Johnson St Greenville, Texas 75401	(903) 408-4140	(903) 408-4142	(903) 454-3721
Houston Dept of HHS 1115 South Braeswood Houston, Texas 77030	(713) 794-9311	(713) 558-3400	(713) 794-9680

Local Health Dept.	Main Telephone	Lab Telephone	Fax
La Marque-Galveston CO Health Dist 1207 Oak Street La Marque, Texas 77568-5925	(409) 938-7221	(409) 938-2449	(409) 938-2271
City of Laredo Health Dept 2600 Cedar Avenue Laredo, Texas 78040	(956) 795-4900	(956) 795-4908	(956) 795-2034
Lubbock City Health Dept 1902 Texas Avenue Lubbock, Texas 79411	(806) 775-2906	(806) 775-2908	(806) 775-3178
Midland Health Dept 3303 W Illinois, Space 22 Midland, Texas 79703	(432) 681-7613	(432) 681-7618	(432) 681-7634
Paris-Lamar CO Health Dept 740 South West 6th St Paris, Texas 75460	(903) 785-4561		(903) 737-9924
Port Arthur City Health Dept 449 Austin Avenue Port Arthur, Texas 77640	(409) 983-8800	(409) 983-8835	(409) 983-8889
San Antonio Metropolitan Hlth Dist 332 W Commerce, Ste 201 San Antonio, Texas 78205-2489	(210) 207-8747	(210) 207-8820	(210) 207-2159
South Texas Laboratory 1301 S. Rangerville Road Harlingen, Texas 78552	(956) 364-8748	(956) 364-8746	(956) 412-8794

Local Health Dept.	Main Telephone	Lab Telephone	Fax
Sweetwater-Nolan CO Health Dept 301 East 12th Street Sweetwater, Texas 79556	(325) 235-5463		(325) 236-6856
Tarrant CO Public Health Dept 1101 S Main St., Ste. 1700 Fort Worth, Texas 76104	(817) 321-5300	(817) 321-4757	(817) 321-4790
Tyler-Northeast TX Public Health Dist 815 North Broadway Rear Tyler, Texas 75702	(903) 535-0030	(903) 535-0090	(903) 535-0095
Tyler-Public Health Lab of East TX 11937 US Hwy 271, Bldg 558 Tyler, Texas 75708-3154	(903) 877-7960	(903) 877-5071	(903) 877-2819
Victoria CO Health Dept 2805 North Navarro St Victoria, Texas 77901	(361) 578-6281		(361) 578-7046
Waco-McLennan CO PH Dist 225 West Waco Drive Waco, Texas 76707	(254) 750-5486	(254) 750-5458	(254) 750-5480
Wichita Falls-Wichita CO PH Dist 1700 Third Street Wichita Falls, Texas 76301	(940) 761-7800	(940) 761-7835	(940) 761-7878

Guidelines for Specimen Collection and Submission

Telephone Inquiries

Telephone inquiries should be directed to (512) 776-7578 for Laboratory results and (512) 776-7598 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:

- Laboratory 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).

Guidelines for Labeling Specimens

Label the specimens correctly with patient name, date of collection, and a second unique identifier (such as Medicaid number, birth date, or medical record number); esure that all information is recorded clearly and legibly on the specimen collection tubes or other specimen collection devices. If a lebel is used, ensure that it is firmly attached to the specimen to ensure accurate identification.

Newborn Screening specimen collection requirements

Healthcare Provider Requirements to Collect the Newborn Screen

Texas rules state that:

- The 1st newborn screen should be collected between 24 - 48 hours of age, or before hospital discharge.
- The 2nd newborn screen should be collected on every infant at 1-2 weeks of age.

For more information regarding the rules outlining a Healthcare Provider's requirement to collect the newborn screen, see the Texas Administrative Code for Newborn Screening [TAC 25 §37.55(a)].

For more information regarding collection of the newborn screening specimen when special circumstances exist such as premature infants, transfusions, facility transfers, TPN, etc. visit Specimen Collection - Special Circumstances (see link below).

Newborn Screening (NBS) Specimen Collection Supplies

- NBS 3 (Medicaid) or NBS 4 (Private Pay) Specimen collection kit
- Heel Lancet
  - Depth of 1.00mm and length of <2.00mm.
  - For premature infants: The lancet should not exceed a depth of .85mm and length of 1.75mm
- Alcohol
- Gloves

Optional supplies:

- Mailing envelopes
- Provider address labels

Instructions for Pages 1-3 of the Newborn Screening kit

Texas Newborn Screening Parent Information (Page 1):

1. Fill out baby's information on the top PARENT COPY form
2. Give copy to parent for all screens. For 1st screens explain that the form must be taken to the baby's doctor at the baby's 7-14 day checkup.

Parental Decision for Storage/Use of NBS Blood Spot Cards (Page 2):

1. Parent or submitter may fill out Section 1. A patient label with the requested information is acceptable.
2. Parent reviews, completes, and signs form.
3. Submitter returns the form to DSHS with blood spot cards if parent requests.
4. It is the parent's option to take the form home and return to DSHS by mail at a later date.

Demographic Form (Page 3):

1. Legibly print ALL information. USE BLACK INK AND BLOCK CAPITAL LETTERS. Press hard for good copies. Do not touch the filter paper blood collection spots.
2. For 2nd screens: If available, fill in the serial number for the baby's 1st screen in the box "Previous Specimen Serial Number."

3. Fill in the number to indicate baby's 'Sex', 'Feed', 'Ethnicity', 'Status', and 'Baby's Age at Time of Collection/Test.'

4. If the specimen is a repeat for a previous abnormal, fill in the Texas DSHS laboratory number in appropriate spaces.

5. Under Submitter Information, fill in the address where the results are to be sent. Labels for this may be ordered using the Order Form for NBS Supplies (above).

6. Check the box on demographic information sheet that indicates "Check to verify parent information & decision form distributed."

7. Remove and keep the yellow submitter copy of the demographic information.

Please Note: Accurate information on the demographic form is vital to testing and result follow-up. Please take extra care when completing this information. Impact of incorrect demographic information includes but is not limited to:

- Rejection of specimen for testing
- Wrong result reported (normal vs. abnormal)
- Result released to wrong healthcare provider
- Delay in initiation of follow-up for on abnormal result.

Recommended Specimen Collection Technique

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 which may contaminate and adversely affect the testing process.

1. Place baby's limb in dependent position.

2. Cleanse skin with alcohol, DRY, and puncture with disposable heel lancet (<2.0mm length).

3. Wipe off first drop of blood.

4. Allow a drop of blood to form and apply DIRECTLY to filter paper. Apply to one side only while viewing from the other side to ensure COMPLETE SATURATION OF THE ENTIRE CIRCLE.

5. Complete one circle at a time and FILL ALL FIVE (5) CIRCLES.

6. Allow card to dry thoroughly in a horizontal position (min 3-4 hours). Do NOT allow specimen to touch any surface.

7. Cover dried specimen with attached flap.

8. Must ship dried specimen WITHIN 24 HOURS in provided envelope (preferably via overnight courier). If mail or carrier services are unavailable, ship as quickly as possible. See shipment information section below.

The heel-stick is always the preferred method for collection of the newborn screening. If it is not possible to perform a heel-stick, please see the *Alternative Methods for Collecting a Newborn Screen Guidelines* for detailed information and instructions.

Shipment of the Newborn Screen

Quick delivery of specimens is imperative. Some disorders need to be identified, diagnosed and treated as soon as possible to prevent onset of clinical symptoms. For example, congenital adrenal hyperplasia and galactosemia may cause life-threatening symptoms by the first week of life.

It is important that submitting facilities are mindful of the time between collection and shipment. To facilitate timely identification and treatment of critical disorders, it is recommended that specimens be shipped via overnight courier and received in the laboratory for testing within 3 days of collection.

For Overnight/Priority Shipping (UPS, DHL, FedEx, etc):
Texas Department of State Health Services
Laboratory Services Section, MC 1947
1100 W. 49th Street
Austin, TX 78756-3199

For regular mail:
Texas Department of State Health Services
Laboratory Services Section, MC 1947
PO Box 149341
Austin, TX 78714-9341

Result Reports

Abnormal Results

Newborn Screening Clinical Care Coordination staff will communicate abnormal newborn screening results to assure appropriate follow-up. If you have questions regarding an abnormal screen or would like disorder specific information, please visit the Newborn Screening Clinical Care Coordination website (http://www.dshs.state.tx.us/newborn/), or call 1-800-252-8023 ext. 3957.

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.

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) 776-3957.

Communication

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.

Unsatisfactory Results

The result report for unsatisfactory specimens will state "UNSATISFACTORY - PLEASE RESUBMIT". The submitting facility is responsible for ensuring that a follow-up specimen is submitted for any unsatisfactory 1st screen.

If a baby has had two newborn screens and one was “unsatisfactory,” refer to the chart below when determining the necessity to collect a 3rd newborn screen:

1st screen	2nd screen	3rd screen necessary?
unsatisfactory	normal	

http://www.dshs.state.tx.us/lab/remotedata.shtm. Email RemoteLabSupport@dshs.state.tx.us with any questions.

Information about HL7:

The Texas NBS Program HL7 system allows facilities to submit validated NBS demographics and receive final test results as real time transactions. If your facility is interested in initiating a HL7 interface project with the Texas Newborn Screening Program, please let us know via email at NewbornScreeningLab@dshs.state.tx.us

Healthcare providers who would like to access result reports but do not use the web system:

Contact Laboratory Reporting for result reports, Monday through Friday, 8am - 5pm by:

- Faxing requests to 512-776-7533 or
- Calling 1-888-963-7111 ext. 7578, or for local calls 512-776-7578

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.

Refusal of Screening

A parent can refuse or object to the screen for religious reasons only (Texas Health & Safety Code Sec. 33.012). Make sure you and your staff are familiar with the benefits of screening and the consequences of undetected disorders.

Points to consider before refusing/objecting to newborn screening:

- There are important medical benefits of newborn screening.
- Symptoms of a newborn screening disorder can appear much later, after a child's health has already been injured by the disease.
- The screen is mandated by law.
- The only legal reason to refuse newborn screening is if it conflicts with the parent's religious tenets or practices.

Provide the information outlined above to parents who are considering refusing the screen. Download the Religious Objection to Newborn Screening Test form (see below) and provide to parents who are sure they want to refuse newborn screening for their infant. The refusal of newborn screening must be signed by the parent/legal guardian/managing conservator and entered in the infant's medical record.

- Religious Objection to Newborn Screening Test (English): http://www.dshs.state.tx.us/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=8589962464
- Religious Objection to Newborn Screening Test (Spanish):

  http://www.dshs.state.tx.us/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=8589962465

Additional Newborn Screening Specimen Resources:

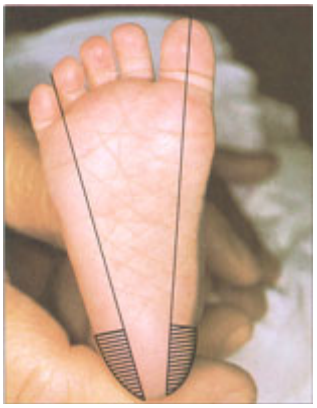
- Healthcare Provider Resources: http://www.dshs.state.tx.us/lab/nbsHCRes.shtm
- General Specimen Collection Requirements: http://www.dshs.state.tx.us/lab/nbs_collect_reqs.shtm
- Alternative Methods for Collecting a Newborn Screen Guidelines: http://www.dshs.state.tx.us/lab/nbsAltMethods.shtm
- Specimen Collection - Special Circumstances: http://www.dshs.state.tx.us/lab/nbsSpecialC.shtm
- FREE Specimen Collection Training Materials: https://www.dshs.state.tx.us/newborn/pubs.shtm
- Newborn Screening Frequently Asked Questions: http://www.dshs.state.tx.us/lab/nbsFAQ.shtm

Newborn Screening Blood Specimen Collection and Handling Procedure

1 Equipment:

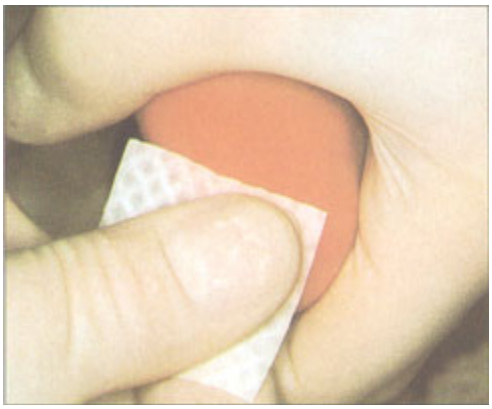
- sterile lancet with tip less than 2.4mm
- sterile alcohol prep
- sterile gauze pads
- soft cloth
- blood collection form
- gloves

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.

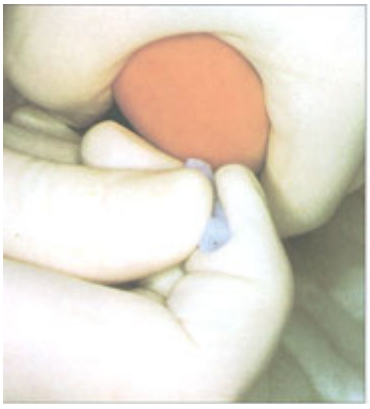


3) Positioning the infant with feet lowered below the heart will help to increase blood flow. The puncture site should be the lateral or medial plantar (sole) surface of the heel. Hatched area indicates safe areas for puncture site.

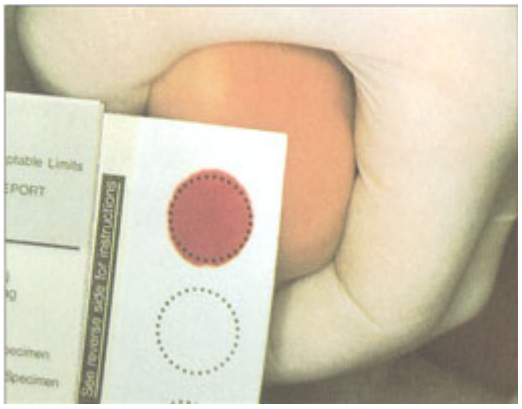
4) Warm the heel to increase blood flow to the area by covering the puncture site for three to five minutes with a warm, moist towel that has been warmed with tap water at a temperature of not more than 42 degrees centigrade.



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) 776-7700.

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) 776-7700. The voice response system is available by calling (512) 776-7300. 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) 776-7661 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.

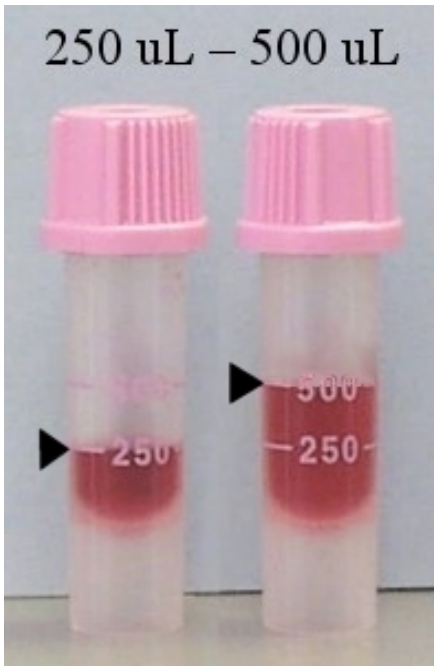
To assist in determining the correct fill volume of the purple top tubes, below are illustrations of the acceptable levels for each type of tube. Each tube must be filled to the manufacturer stated fill volume, or the specimen will be rejected. For example: If you need to collect 4 mL of blood for a 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 Laboratory 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) 776-7318. When approved, these specimens must be submitted in Cary-Blair transport medium. Instruction sheet and medium are available upon request. Call (512) 776-7661.

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) 776-7318. 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) 776-7661.

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) 776-7342 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 Laboratory 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 Laboratory 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.

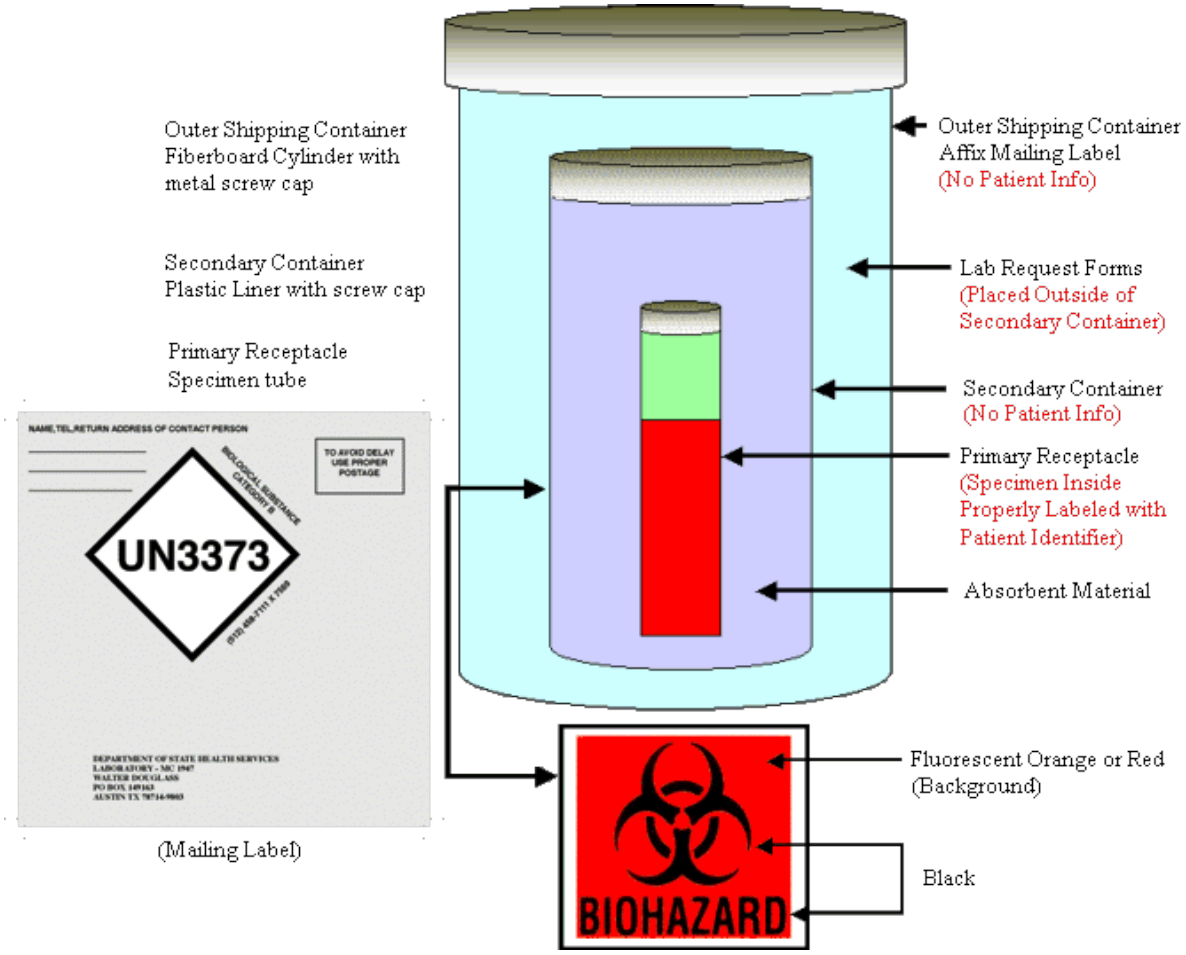
The Texas Department of State Health Services Laboratory, effective immediately, will only supply mailing containers for Biological Substance, Category B. Use of TDSHS containers will insure compliance with U.S. Postal and DOT requirements.

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 laboratory 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) 776-7598.

Cholesterol, Lipid Profile, and Glucose Packing Instructions and Diagram

Required Specimen Type for Cholesterol and Lipid Profile:

- Collect blood in a red top tube and allow to clot completely.
- Centrifuge the specimen to separate the serum from the clot within 2 hours of collection.
- Transfer the serum from the red top tube into the transport tube.
- Label the transport tube with the patient's first and last name, and a secondary identifier, such as Date of Birth, Date of Collection, medical record number, or Medicaid number.
- Store the labeled transport tube in the freezer (-20 degrees Celsius or lower) until ready to ship.
- Specimens collected in a gold top or serum separator tube **must** have the serum removed and transferred to the transport tube. Tubes with gel separators are **not** intended to be frozen.

Required Specimen Type for Glucose:

- Collect blood in a red top tube and allow to clot completely.
- Centrifuge the specimen to separate the serum from the clot within 2 hours of collection.
- Transfer the serum from the red top tube into the transport tube.
- Label the transport tube with the patient's first and last name, and a secondary identifier, such as Date of Birth, Date of Collection, medical record number, or Medicaid number.
- Store the labeled transport tube in the freezer (-20 degrees Celsius or lower) until ready to ship.
- Specimens collected in a gold top or serum separator tube **must** have the serum removed and transferred to the transport tube. Tubes with gel separators are **not** intended to be frozen.

General Instructions:

- Clearly label each specimen with the patient's first and last name as written on the submission form. Pre-printed patient labels used for specimen identification **must** match the patient's name on the submission form.
- Submit a submission form for each patient with corresponding specimen tube.
- Retain a copy of the submission form for your records.
- Specimens must be triple-contained.
- Batching of specimens for shipment is recommended. Batch specimens for shipping once or twice per week.
- Specimens **must** be kept frozen until shipped. Ship specimens overnight on dry ice OR with adequate ice packs so that specimens arrive at the DSHS Laboratory cold. Specimens received at room temperature will be unsatisfactory for testing.
- Do **not** ship cholesterol, lipid profile or glucose specimens on Fridays or prior to a federally observed holiday.

For questions about shipment of cholesterol, lipid profile, and glucose specimens, please call 512-776-6236 or toll free 1-888-963-7111, extension 6236.

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.

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) 776-7111 ext. 2414 or *toll free* (888) 963-7111 ext. 2414.
For shipping containers, call (512) 776-7661 or *toll free* (888) 963-7111 ext. 7661.

Shipping containers for cold shipment are available upon request, call (512) 776-7661 or (888) 963-7111 ext. 7661.

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.

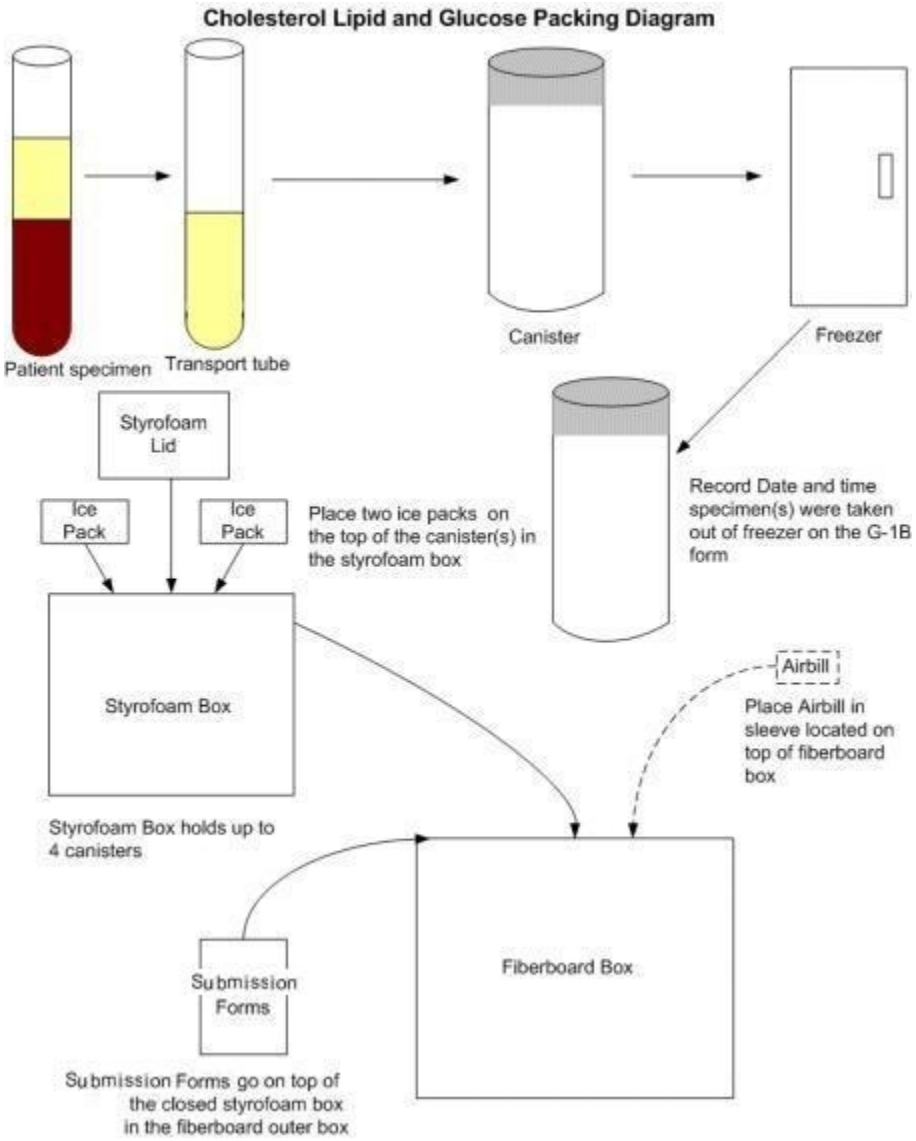
↓

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



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) 776-7111 ext. 2414 or *toll free* (888) 963-7111 ext. 2414.

Shipping containers for cold shipment are available upon request, call (512) 776-7661 or *toll free* (888) 963-7111 ext. 7661.

Specimen Receiving, Laboratory Hours, Holidays

Laboratory Hours

Business Office Hours
8:00 a.m. - 5:00 p.m.
Monday - Friday
(512) 776-7318
Fax (512) 776-7294

Specimen Acquisition Hours
7:00 a.m. - 5:00 p.m.
Monday - Friday
(512) 776-7598

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."
- **After hours receipt of samples is temporarily unavailable.** All packages transported through a courier (FedEx, UPS, LoneStar Overnight) will be accepted during regular business hours. Specimens submitted to Greyhound Bus Station-Austin will be picked up by laboratory staff as usual. Hand-delivered samples will be accepted only during regular business hours Monday - Friday (7:00 a.m. - 5:00 p.m.) until further notice. If you have questions concerning this issue, please call (512) 776-7598.

Holiday Schedule for FY 2014			
Holiday	**Agency Status**	**Date**	**Day of Week**
Labor Day	All agencies closed	09-02-13	Monday
Rosh Hashanah	*Optional Holiday*	*09-05-13*	*Thursday*
Rosh Hashanah	*Optional Holiday*	*09-06-13*	*Friday*
Yom Kippur		*09-14-13*	*Saturday*
Veteran's Day		11-11-13	Monday
Thanksgiving Day	All agencies closed	11-28-13	Thursday
Day after Thanksgiving	All agencies closed	11-29-13	Friday
Christmas Eve Day	All agencies closed	12-24-13	Tuesday
Christmas Day	All agencies closed	12-25-13	Wednesday
Day after Christmas	All agencies closed	12-26-13	Thursday
New Year's Day	All agencies closed	01-01-14	Wednesday
Martin Luther King, Jr. Day	All agencies closed	01-20-14	Monday
Confederate Heroes' Day		01-19-14	Sunday
Presidents' Day	All agencies closed	02-17-14	Monday
Texas Independence Day		03-02-14	Sunday
Cesar Chavez Day	*Optional Holiday*	*03-31-14*	*Monday*
Good Friday	*Optional Holiday*	*04-18-14*	*Friday*
San Jacinto Day	Skeleton crew required	04-21-14	Monday
Memorial Day	All agencies closed	05-26-14	Monday
Emancipation Day	Skeleton crew required	06-19-14	Thursday
Independence Day	All agencies closed	07-04-14	Friday
LBJ’s Birthday	Skeleton crew required	08-27-14	Wednesday

Laboratory Forms

Order forms for Laboratory mailing containers and supplies
Phone No. (512) 776-7661
Fax No. (512) 776-7672

Form #	Name
G-6A	Order Form for General Supplies
G-6C	Order Form for Gonorrhea/Chlamydia (GC/CT) Laboratory Supplies
G-399	Order Form for Child Health Laboratory Supplies
G-6D	Order Form for Newborn Screening Supplies
	Order Form for PKU Monitoring Laboratory Supplies
	Order Form for TB Supplies

Test Request Forms - Laboratory Services
Phone No. (512) 776-7578
FAX No. (512) 776-7533

Form #	Name
	Program Descriptions for Laboratory Forms
	Submitter Identification (ID) Number Request Form
F-14	South Texas Laboratory Order Form for General Laboratory Supplies
F40-A	South Texas Laboratory Chemistry Specimen Submission Form
F40-B	South Texas Laboratory Microbiology Specimen Submission Form
F40-C	South Texas Laboratory Biothreat Specimen Submission Form
F40-D	South Texas Laboratory Emergency Preparedness Specimen Submission Form
G-1B	Biochemistry and Genetics Specimen Submission Form
G-THSTEPS	Texas Health Steps Specimen Submission Form
G-2A	Serology Specimen Submission Form
G-2B	Bacteriology and Parasitology Specimen Submission Form
G-2V	Virology Specimen Submission Form
G-MYCO	Mycobacteriology / Mycology Specimen Submission Form
G-9	Laboratory Test for Rabies
G-14	Mosquito Surveillance Adult / Larval Specimen Submission Form
G-19	Water Bacteriology Specimen Submission Form
G-22	Environmental / flouride / microbiological Specimen Submission
G-23	Food Sample Specimen Submission Form
G-26	Uniform Analysis for TDCJ & TYC Specimen Submission Form
G-27	Biothreat Environmental Specimen Submission Form
G-27A	Emergency Preparedness Specimen Submission Form

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**
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, 2014. Prices are subject to change without notice.

Obtaining DSHS Laboratory Service:

Setting up an account:
If you don't already have an account or submitter number with the DSHS Laboratory, call our Reporting Department at (512) 776-7318 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) 776-7318 ext 2377. To order supplies and kits call the Container Prep Department at (512) 776-7661. 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) 776-7672. 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) 776-7661 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 Laboratory 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 Laboratory 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) 776-7317

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

DSHS Laboratory Services Section
FEE SCHEDULE

Austin Laboratory

CLIA ID: 45D0660644
CAP ID: 3024401
Effective (October 01, 2016)
Tax ID # 32-0113643
NPI # 111-493-1391
DSHS LABORATORY SERVICES SECTION FEE SCHEDULE - AUSTIN LABORATORY

		HUMAN TESTING:			
Biochemistry and Genetics	**Newborn Screening**	**Procedure Name**	**Procedure No.**	**CPT**	**Cost**
		Hemoglobin Electrophoresis	BZZ0008A	83020 83021	3.98
		Newborn Screening Panel Test Kit (private pay) Fee	N/A	N/A	55.24
		Phenylalanine/Tyrosine	BZZ0003A	83789	16.61
Biochemistry and Genetics	**Newborn DNA Analysis**	**Procedure Name**	**Procedure No.**	**CPT**	**Cost**
		Cystic Fibrosis: Common Mutation Panel	BAR0125Z	81220	175.19
		Galactosemia: Common Mutation Panel	BAE0056Z	81401	529.03
		Hemoglobin DNA Test: Beta-Globin Gene Sequencing	BAN0114Z	81401	1054.24
		Hemoglobin DNA Test: Common Beta- Thalassemia Mutation	BAM0108Z	81401	287.66
		Hemoglobin DNA Test: Hb, S, C, E, D or O- Arab	BAH0080Z	81401	255.72
		Medium Chain Acyl-CoA Dehydrogenase Deficiency (MCAD) Mutation Panel	BAT0139Z	81401	374.95
Biochemistry and Genetics	**Clinical Chemistry**	**Procedure Name**	**Procedure No.**	**CPT**	**Cost**
		Cholesterol	BZZ0015A	82465	5.18
		Glucose Fasting	BZZ0106A	82947	4.30
		Glucose Random	BZZ0107A	82947	4.30
		Hemoglobin	BZZ0024A	85018	1.53
		High-density lipoprotein (HDL)	BZZ0026A	83718	6.02
		Lead	BZZ0023A	83655	3.47
		Lipid Panel (includes cholesterol, triglycerides, high density lipoprotein (HDL), and low- density lipoprotein (LDL)	BZZ0022A	80061	15.04

MICROBIOLOGY: HUMAN AND NON-HUMAN TESTING

NOTE: Charges for Microbiological Sciences testing will be based upon the actual testing performed as determined by suspect organisms, specimen type, and clinical history provided.

Microbiological Sciences	**Serological Analysis**	**Procedure Name**	**Procedure No.**	**CPT**	**Cost**
		Brucella IgG	MZZ0135A	86622	44.10
		Chagas, IgG	MPS0016A	86753	27.68
		Chikungunya, IgM	MAM0087A	86790	74.72
		Dengue, IgM EIA	MAM0086A	86790	58.11
		Ehrlichia IFA	MZZ0155A	86666	131.31
		Emerging Disease, IgM	MAM0088A	86790	74.72
		Francisella, IgG	MZZ0336A	86668	61.15
		Gonorrhea/Chlamydia (GC/CT), Amplified RNA probe	MBB0191A	87491, 87591	20.28
		Hantavirus IgG/IgM	MBC0198A	86790	362.05
		Hepatitis A, IgM	MBD0201A	86709	44.04
		Hepatitis A, Total	MBE0203A	86708	34.45
		Hepatitis B Core Antibody	MBF0205A	86704	36.06
		Hepatitis B Core IgM Antibody	MZZ0214A	86705	44.75
		Hepatitis B Surface Antibody (Ab)	MBJ0211A	86706	28.34
		Hepatitis B Surface Antigen (Ag)	MBK0213A	87340	18.47
		Hepatitis C (HCV)	MBL0217A	86803	25.68
		HIV Combo Ag-Ab	MBP0229A	87389	7.90
		HIV Serum confirmation test	MBP0231A	86701, 86702	83.74
		Measles, IgG	MCW0330A	86765	21.35
		Measles, IgM	MCW0328A	86765	85.60
		Mumps, IgG	MCC0276A	86735	22.62
		Q-Fever, IgG	MCL0292A	86638	85.61
		QuantiFERON -TB serology	MZZ0468A	86480	53.66
		Rocky Mountain Spotted Fever, IgG	MCR0317A	86757	42.93
		Rubella IgM (German Measles)	MCT0320A	86762	24.77
		Rubella Screen (German Measles)	MCU0322A	86762	22.33
		Schistosoma (EIA)	MPS0010A	86682	10.30
		St. Louis Encephalitis (SLE), IgM EIA	MAM0460A	86653	107.84
		Strongyloides (EIA)	MPS0002A	86682	16.89
		Syphilis Confirmation Particle Agglutination (TP-PA)	MCS0318A	86780	27.02

		Syphilis Rapid Plasma Reagin (RPR) - Qualitative	MBY0264A	86592	2.89
		Syphilis Rapid Plasma Reagin (RPR) - Quantitative	MBN0224A	86593	12.88
		Syphilis Screen, IgG	MBN0222A	86780	7.57
		Typhus Fever, IgG	MCR0318A	86757	42.93
		West Nile Virus (WN), IgM EIA	MZZ0082A	86788	107.84
		Yersinia pestis (Plague)Serum	MCG0282A	86793	237.18

NOTE: Charges for Microbiological Sciences testing will be based upon the actual testing performed as determined by suspect organisms, specimen type, and clinical history provided.

Microbiological Sciences	Molecular Biology	Procedure Name	Procedure No.	CPT	Cost
		Arbovirus Polymerase Chain Reaction (PCR) Eastern Equine Encephalitis (EEE) Mosquitoes	MMB1026A	n/a	60.39
		Arbovirus Polymerase Chain Reaction (PCR) St. Louis Encephalitis (SLE) Mosquitoes	MMB1022A	n/a	60.18
		Arbovirus Polymerase Chain Reaction (PCR) Western Equine Encephalitis (WEE) Mosquitoes	MMB1020A	n/a	60.41
		Arbovirus Polymerase Chain Reaction (PCR) West Nile Virus (WNV) Mosquitoes	MMB1040A	n/a	57.87
		Arbovirus Polymerase Chain Reaction (PCR) Eastern Equine Encephalitis (EEE)	MMB0026A	n/a	60.39
		Arbovirus Polymerase Chain Reaction (PCR) St. Louis Encephalitis (SLE)	MMB0022A	n/a	60.18
		Arbovirus Polymerase Chain Reaction (PCR) Western Equine Encephalitis (WEE)	MMB0020A	n/a	60.41
		Polymerase Chain Reaction (PCR) West Nile Virus	MMB0040A	n/a	57.87
		Bordetella pertussis, Parapertussis, and Bordetella holmesii Polymerase Chain Reaction (PCR)	MZZ0377A	87798	213.79
		Bacteriology Pulsed Field Gel Electrophoresis (PFGE)	MCA0266A	87152	112.67
		Malaria Polymerase Chain Reaction (PCR)	MMB0030A	87798	141.79
		Norovirus (Norwalk-like virus) Polymerase Chain Reaction (PCR)	MZZ0450A	87798	162.96
		Salmonella Serotyping	MAA0005A	87077	86.63
		Shiga Toxin Producing E. Coli Polymerase Chain Reaction (PCR)	MMB0004A	87150	117.90
		Shigella Serotyping	MAA0004A	87077	120.38
		Rotovirus Polymerase Chain Reaction (PCR)	MMB0002A	87798	55.75

NOTE: Charges for Microbiological Sciences testing will be based upon the actual testing performed as determined by suspect organisms, specimen type, and clinical history provided.

Microbiological Sciences	Mycobacteriology Mycology	Procedure Name	Procedure No.	CPT	Cost
		Acid Fast Bacilli (AFB) Culture	MZZ0062A	87116	32.04
		Acid Fast Bacilli (AFB) Direct Detection by High-Performance Liquid Chromatography	MAF0064A	87143	66.26
		Acid Fast Bacilli (AFB) Isolate Identification; High- Performance Liquid Chromatography (HPLC)	MAC0052A	87143	124.90
		Acid Fast Bacilli (AFB) Isolate Identification; Probe	MAC0053A	87149	81.40
		Acid Fast Bacilli (AFB) Biochemicals; Basic	MZZ0451A	87118	132.35
		Acid Fast Bacilli (AFB) Biochemicals; Complex	MZZ0455A	87118	472.84
		Nucleci Acid Amplification for *Mycobacterium tuberculosis* complex	MAB0050A	87556	166.70
		Acid Fast Bacilli (AFB) Specimen Concentration	MAG0066A	87015	5.38
		Acid Fast Bacilli (AFB) Smear	MAH0068A	87206	11.59
		Acid Fast Bacilli (AFB) Referred Isolate Identification	MAC0055A	87143	133.88
		Aerobic Actinomycete	MZZ0180A	87077	106.96
		Actinomycete,High-Performance Liquid Chromatography	MCD0276A	87143	138.05
		Mold Identification	MZZ0181A	87107	65.98
		Mold Isolate Identification by Probe	MZZ0185A	87149	81.40
		Yeast Identification	MZZ0177A	87106	90.34
		Acid Fast Bacilli (AFB) Mycobacterium Kansasii, Rifampin Agar	MBZ0266A	87190	185.96
		Acid Fast Bacilli (AFB)-AGAR Proportion Drugs; Capreomycin	MAD0065A	87190	30.41

		Acid Fast Bacilli (AFB)-AGAR Proportion Drugs; Ethambutol	MAD0070A	87190	30.41
		Acid Fast Bacilli (AFB)-AGAR Proportion Drugs; Ethionamide	MAD0067A	87190	30.41
		Acid Fast Bacilli (AFB)-AGAR Proportion Drugs; Isonaizid 0.2 mcg/ml	MAD0078A	87190	30.41
		Acid Fast Bacilli (AFB)-AGAR Proportion Drugs; Isoniazid, 1.0 ug/ml	MAD0071A	87190	30.41
		Acid Fast Bacilli (AFB)-AGAR Proportion Drugs; Kanamycin	MAD0066A	87190	30.41
		Acid Fast Bacilli (AFB)-AGAR Proportion Drugs; Ofloxacin	MAD0063A	87190	30.41
		Acid Fast Bacilli (AFB)-AGAR Proportion Drugs; Rifabutin	MAD0064A	87190	30.41
		Acid Fast Bacilli (AFB)-AGAR Proportion Drugs; Rifampin	MAD0069A	87190	30.41
		Acid Fast Bacilli (AFB)-AGAR Proportion Drugs; Streptomycin	MAD0068A	87190	30.41
		Primary Panel:	PZM0001A	87188 x4	115.05
		MGIT Isoniazid, 0.1mcg/ml		*87188*	*28.76*
		MGIT Isoniazid, 0.4mcg/ml		*87188*	*28.76*
		MGIT Ethambutol		*87188*	*28.77*
		MGIT Rifampin		*87188*	*28.76*
		Primary AGAR Proportion Panel:	PZM0002A	87190 x3	91.23
		Isoniazid 0.2 Agar Proportion Panel		*87190*	*30.41*
		Rifampin Agar Proportion Panel		*87190*	*30.41*
		Isoniazid 1.0 Agar Proportion Panel		*87190*	*30.41*
		MGIT PZA Susceptibility Test	MZM0061A	87188	77.17

VIROLOGY: HUMAN AND NON-HUMAN TESTING

NOTE: Charges for Microbiological Sciences testing will be based upon the actual testing performed as determined by suspect organisms, specimen type, and clinical history provided.

Microbiological Sciences	Virology	Procedure Name	Procedure No.	CPT	Cost
		Arbovirus Identification Direct Fluorescent Antibody	MAN0091A	n/a	152.93
		Bat Identification	MCM0296A	n/a	3.52
		Chikungunya Real Time PCR	MZZ0555A	87798	145.02
		Coxsackievirus, Direct Fluorescent Antibody (DFA)	MDC0400A	87253	84.37
		Culture Arbovirus from Mosquito	MAN0093A	n/a	44.25
		Culture: Supplemental Cell Culture	MDE0363A	87252	135.46
		Culture Viral; Reference	MDC0345A	87252	96.66
		Dengue Real Time PCR	MZZ0701A	87798	215.52
		Echovirus Direct Fluorescent Antibody (DFA)	MDC0402A	87253	115.80
		Electron Microscopy (includes observation, electron microscopy and photography)	MAX0157A	88348	527.91
		Emerging Disease PCR	MZZ0545A	87798	137.31
		Enterovirus Direct Fluorescent Antibody (DFA)	MDC0404A	87253	162.96
		Herpes Simplex Virus 1 & 2 Direct Fluorescent Antibody (DFA)	MBM0222A	87253	96.52
		Influenza A/B Identification Direct Fluorescent Antibody (DFA)	MBS0242A	87253	54.02
		Influenza Pyrosequencing for Antiviral Resistance	MMV0210A	81479	13.11
		Influenza Surveillance with Culture	MBS0237A	87250, 87275, 87276	248.00
		Influenza Surveillance without Culture (typing, PCR)	MZZ0238A	87502	131.32
		Insect Identification	MBT0248A	n/a	20.86
		Mosquito Identification for Surveillance	MZZ0411A	n/a	17.66
		Measles Real Time PCR	MZZ0750A	87798	126.83
		Mumps, Real Time PCR	MZZ0700A	87798	127.83
		PCR Emerging, Non-clinical testing Aedes	MMV0102A	n/a	17.20
		PCR Emerging, Non-clinical testing Culex	MMV0104A	n/a	16.58
		Rabies Detection Direct Fluorescent Antibody (DFA)	MCM0300A	n/a	72.99
		Rabies Detection Direct Fluorescent Antibody (DFA), Cell Culture	MCM0301A	n/a	158.77
		Rabies Molecular Typing	MCN0302Z	n/a	181.05
		Rabies Monoclonal Typing	MCP0307Z	n/a	31.19
		Viral isolation, clinical	MDD0355A	87250, 87275, 87276	172.70
		Viral Indirect Fluorescent Antibody (IFA); Other	MDC0406A	87253	147.83
		Viral Indirect Fluorescent Antibody (IFA); Respiratory	MDC0408A	87253	95.34
		Virus Detection Hemadsorption	MZZ0236A	87253	42.18

		Viral Molecular Sequencing	MDD0356A	81479	400.65
		Virus Typing Hemaglutination Inhibition	MDE0366A	86280	67.49
		2012 Novel Coronavirus	MCN0310A	87798	78.92

BACTERIOLOGY: HUMAN AND NON-HUMAN TESTING

NOTE: Charges for Microbiological Sciences testing will be based upon the actual testing performed as determined by suspect organisms, specimen type, and clinical history provided.

Microbiological Sciences	Clinical Bacteriology	Procedure Name	Procedure No.	CPT	Cost
		Aerobic Isolation from Clinical Specimen	MAA0025A	87077	303.92
		Anaerobic ID, Pure Culture	MCK0290Z	87076	146.70
		Anaerobic Isolation from Clinical Specimen	MAK0073A	87075, 87076	118.39
		Culture, Stool	MAA0017Z	87045, 87046, 87075, 87076	158.07
		Definitive Identification, Bacillus	MAA0027A	87077	165.27
		Definitive Identification, group B Streptococcus (Beta Strep)	MZZ0449Z	87077, 87147	113.70
		Definitive Identification, Bordetella	MAA0028A	87077	147.77
		Definitive Identification, Campylobacter	MAA0030A	87077	166.88
		Definitive Identification, Gram Negative Rod	MAA0032A	87077	261.00
		Definitive Identification, Gram Positive Rod	MAA0033A	87077	226.12
		Definitive Identification, Haemophilus	MAA0034A	87077	107.64
		Definitive Identification, Legionella	MAA0035A	87077, 87140	265.57
		Definitive Identification, Neisseria	MAA0036A	87077, 87147	141.84
		Definitive Identification, Pertussis	MAA0050A	87077	287.98
		Definitive Identification, Staphylococcus	MAA0037A	87077	188.88
		Definitive Identification, Streptococcus	MAA0038Z	87077, 87147	258.91
		Definitive Identification, Vibrio	MAA0018A	87077	228.15
		Diptheria Screen	MAA0023A	87077	62.65
		Enteric Bacteria, Culture Confirmation	MAA0053A	87077	158.53
		Enterohaemorrhagic Escherichia Coli (EHEC), Shiga-like Toxin assay	MAA0047A	87427	38.60
		Escherichia coli (E.coli) serotyping	MAA0010A	87147	25.71
		GC culture confirmation by amplified or direct probe	MBB0194A	87590	37.66
		GC screen	MCE0278A	87077	44.54
		Group B strep screen	MZZ0445A	87077	48.32
		Haemophilus Influenzae serotyping	MZZ0399A	87147	79.64
		Haemophilus, Isolation from Clinical	MAA0012A	87070	100.18
		Kirby Bauer	MAA0139A	87147	9.92
		Neisseria meningitidis serotyping	MAA0013A	87147	167.48
		Toxic Shock Assay (TSST 1)	MAA0048A	87427	125.25
		Vibrio cholera serotyping	MZZ0400A	87147	32.73

NOTE: Charges for Microbiological Sciences testing will be based upon the actual testing performed as determined by suspect organisms, specimen type, and clinical history provided.

Microbiological Sciences	Medical Parasitology	Procedure Name	Procedure No.	CPT	Cost
		Blood Parasite Exam, Thick & Thin Giemsa	MPAR001A	87207	181.79
		Cyclospora Identification (PCR)	MPAR013A	87798	141.79
		Fecal Ova & Parasite Exam, Concentration & Trichrome	MPAR002A	87177, 87209	67.41
		Microfilariae identification	MPAR012A	87015	46.52
		Misc. Parasite Exam, Acid Fast Stain	MPAR003A	87207	74.17
		Misc. Parasite Exam Chromotrope Stain	MPAR004A	87207	140.55
		Misc. Parasite Exam, Giemsa Stain	MPAR005A	87207	177.55
		Misc. Parasite Exam, Tissue Prep.	MPAR006A	87169	73.55
		Misc. Parasite Exam, Trichrome Stain	MPAR007A	87209	96.98
		Misc. Parasite Exam, Wet Mount	MPAR008A	87177	73.55
		Pinworm exam	MPAR009A	87172	37.50
		Urine Ova & Parasite Exam	MPAR010A	87177	56.36
		Worm Identification	MPAR011A	87169	46.44

BACTERIOLOGY NON-HUMAN TESTING:

Microbiological Sciences	Consumer Microbiology	Procedure Name	Procedure No.	CPT	Cost
		Food Analysis: Bacillis Identification	MAQ0107A	n/a	101.16
		Food Analysis: Campylobacter	MAQ0109A	n/a	145.40
		Food Analysis: C. Perfringens	MAQ0108A	n/a	217.06
		Food Analysis: Cronobacter sakazakii	MAQ0121A	n/a	115.17
		Food Analysis: E.coli 0157	MAQ0110A	n/a	121.52
		Food Analysis: E.coli, MPN	MAQ0210A	n/a	180.97
		Food Analysis: Non-0157 STEC	MAQ0120A	n/a	295.02
		Food Analysis: Listeria	MAQ0111A	n/a	150.75
		Food Analysis: Salmonella	MAQ0112A	n/a	66.07
		Food Analysis: Shigella	MAQ0113A	n/a	119.40
		Food Analysis: Staphylococcus	MAQ0114A	n/a	127.28
		Food Analysis: Staphylococcus Enterotoxin	MAQ0115A	n/a	90.80
		Food Analysis: Yersinia	MAQ0119A	n/a	62.48
		Milk and Dairy test, Aflatoxin	MZZ0403A	n/a	65.63
		Milk and Dairy Products; Count, Coliform	MDG0381A	n/a	33.97

		Milk and Dairy Products; Coliform Count for Containers	MDG0384A	n/a	41.28
		Count, Standard Plate, Milk	MDG0382A	n/a	22.14
		Milk: Count for Containers, Standard Plate Count	MDG0386A	n/a	44.33
		Dairy Water	MZZ0440A	n/a	16.19
		Milk and Dairy, Freezing Point	MZZ0405A	n/a	26.59
		Milk and Dairy: Growth inhibitors, Charm 3 SL-S beta	MZZ0500A	n/a	81.14
		Milk and Dairy: Growth inhibitors, Charm SLBL beta lactam	MZZ0502A	n/a	58.91
		Milk and Dairy: Growth inhibitors, Charm II, Sulfonamide	MZZ0504A	n/a	51.69
		Milk and Dairy: Growth inhibitors, Charm II, Tetracycline	MZZ0506A	n/a	55.15
		Milk and Dairy: Growth inhibitors, Delvo Test	MZZ0508A	n/a	25.60
		Milk and Dairy Test, Phosphatase	MZZ0384A	n/a	37.82
		Count, Somatic Cell (DMSC) cow	MZZ0401A	n/a	50.83
		Count, Somatic Cell (DMSC) goat	MZZ0408A	n/a	58.54
		Count, Somatic Cell (OSCC) cow	MZZ0402A	n/a	51.05
		Count, Somatic Cell (OSCC) goat	MZZ0409A	n/a	51.05
		Bay Water	MZZ0435A	n/a	25.76
		Brevetoxin; Shellfish	MZZ0378A	n/a	242.95
		Count, Fecal Coliform, MPN Shellfish	MZZ0418A	n/a	151.43
		Standard Plate Count: Shellfish	MZZ0385A	n/a	67.38
		Shellfish: Vibrio	MAQ0117A	n/a	211.47
		Shellfish: Vibrio, MPN	MAQ0217A	n/a	478.70
		Water, HPC (SimPlate)	MZZ0510A	n/a	84.86
		Potable Water	MZZ0441A	n/a	16.19
		Surface Water, (MPN), (Quanti-tray)	n/a	n/a	257.66
		Yersinia pestis (plague), Nobuto	MCH0284A	n/a	8.57

EMERGENCY PREPAREDNESS HUMAN AND NON- HUMAN TESTING:

Emergency Preparedness: Biothreat and Chemical Threat specimens and testing requests accepted from Law Enforcement Officials Only
Please Contact the Emergency Preparedness Branch of the DSHS Laboratory in Austin for more information

ENVIRONMENTAL NON-HUMAN TESTING:

Environmental	**Chemical Analyses and Physical Testing**		**Procedure No.**	**CPT**	**Cost**
Environmental	**Drinking Water Samples: Inorganic Analysis**		**Procedure No.**	**CPT**	**Cost**
	Alkalinity, total and phenolphthalein, Standard Methods (SM), 19th edition, 2320B:				
		Alkalinity, Total and Phenolphthalein	EZZ0206A	n/a	17.44
	Chloride, EPA method 300.0:				
		Chloride	EZZ0007A	n/a	15.11
	Specific conductance, SM, 19th edition, 2510B:				
		Specific Conductance	EZZ0012A	n/a	16.42
	Cyanide, total, QuickChem 10-204-00-1-X:				
		Cyanide, total	EZZ0031A	n/a	53.75
	Cyanide, free, SM-20th edition, 4500-CN F:				
		Cyanide, free	EZZ0232A	n/a	113.43
	Fluoride, EPA method 300.0:				
		Fluoride	EZZ0013A	n/a	15.03
	Nitrate and nitrite as nitrogen, EPA method 353.2:				
		Nitrate + Nitrite (as N)	EZZ0047A	n/a	8.49
	Nitrate as nitrogen, EPA method 353.2:				
		Nitrate, N (NO3-N)	EZZ0048A	n/a	8.49
	Nitrite as nitrogen, EPA method 353.2:				
		Nitrite, N (NO2-N)	EZZ0049A	n/a	8.49
	Perchlorate, EPA method 314.0:				
		Perchlorate	EZZ0023A	n/a	1,008.60
	pH, SM, 19th edition, 4500H:				
		pH, W ater	EZZ0017A	n/a	4.15
	Solids, total dissolved, determined, SM, 20th edition, 2540C:				
		Solids, Total Dissolved, Determ.	EZZ0059A	n/a	14.65
	Sulfate, EPA method 300.0:				
		Sulfate	EZZ0020A	n/a	15.11
	Routine Water Mineral Group, EPA methods 300.0 and 353.2 and SM, 19th edition, 2320B, 2510B, 4500-HB and 2540C:				
		Routine W ater Mineral Group	EZZ0016A	n/a	102.25
Environmental	**Drinking Water Samples: Metals Analysis**		**Procedure No.**	**CPT**	**Cost**
	Sample preparation fee, total recoverable metals digestion, EPA method 200.2:				
		Total recoverable metals digestion, drinking water	EZZ0174A	n/a	20.29
	Mercury, EPA method 245.1:				
		Mercury / Drinking W ater	EZZ0194A	n/a	18.41
	Single ICP, EPA method 200.7:				
		Single ICP / Drinking W ater	EZZ0195A	n/a	7.73
	Single ICP-MS, EPA method 200.8:				
		Single ICP-MS / Drinking W ater	EZZ0205A	n/a	6.88
	All metals, drinking water group, EPA methods 200.7, 200.8, 245.1 and SM19th edition 2340B:				
		All Metals / Drinking W ater	EZZ0191A	n/a	160.16
	ICP/ICP-MS metals drinking water group, EPA methods 200.7, 200.8, and SM 19th edition 2340B:				

		ICP/ICP-MS metals Group / Drinking W ater	EZZ0192A	n/a	81.33
	Total Hardness, SM 19th edition 2340B:				
		Total Hardness	EZZ0015A	n/a	10.58
	Reagent water metal suitability group, EPA methods 200.7 and 200.8:				
		Reagent W ater Suitability Group	EZZ0215A	n/a	41.80
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 required sample preparation fee.					
Environmental	**Drinking Water Samples: Organic Analysis**		**Procedure No.**	**CPT**	**Cost**
	Chlorinated pesticides and polychlorinated biphenyls (PCBs) in drinking water, EPA method 508.1:				
		Chlorinated Pesticides and PCBs, DW , EPA 508.1	EZZ0222A	n/a	150.22
	Chlorophenoxy herbicides, EPA method 515.4:				
		Chloropheno Herbicides, DW , EPA 515.4	EZZ0079A	n/a	313.25
	Diquat and paraquat EPA method 549.2:				
		DIQUAT and PARAQUAT, DW , EPA 549.2	EZZ0094A	n/a	72.09
	Ethylene dibromide (EDB) and dibromochloropropane (DBCP), EPA				
		EDB & DBCP, DW , EPA 504.1	EZZ0080A	n/a	75.67
	Endothall, EPA method 548.1:				
		Endothall, EPA 548.1	EZZ0070A	n/a	265.63
	Glyphosate, EPA Method 547:				
		Glyphosate, DW , EPA 547	EZZ0199A	n/a	39.40
	Haloacetic acids, EPA method 552.2:				
		Haloacetic Acids, DW , EPA 552.2	EZZ0088A	n/a	53.72
	Carbamates insecticides, EPA 531:				
		Carbamates Insecticides, DW , EPA 531.1	EZZ0093A	n/a	57.01
	PCB SOC6 EPA method 508A:				
		PCB,DW ,SOC 6, EPA 508A	EZZ0082A	n/a	1,045.02
	Synthetic organic contaminants group 5, EPA methods 508.1 and 525.2:				
		Synthetic Organic Contaminants - Group 5 (SOC5)	EZZ0072A	n/a	205.41
	Semi-volatile organic compounds by GC-MS, EPA method 525.2:				
		Semi-Volatile Organic Compounds by GC- MS, Drinking W ater	EZZ0075A	n/a	111.74
	Trihalomethanes, EPA method 524.2:				
		Trihalomethanes, DW , EPA 524.2	EZZ0084A	n/a	50.13
	Trihalomethanes, EPA method 551.1:				
		Trihalomethanes, DW , EPA 551.1	EZZ0230A	n/a	43.91
	Volatile organic compounds VOCs by GC-MS, EPA method 524.2:				
		VOCs, by GC-MS	EZZ0085A	n/a	55.12
Environmental	**Drinking Water Samples: Radiochemical Analysis**		**Procedure No.**	**CPT**	**Cost**
	Gross alpha and beta, EPA method 900.0:				
		Gross Alpha and Beta, Drinking W ater	EZZ0143A	n/a	170.73
	Gross alpha or beta, EPA method 900.0				
		Gross Alpha or Beta, Drinking W ater	EZZ0144A	n/a	170.73
	Gamma emitting isotopes, EPA method 901.1:				
		Gamma Emitting Isotopes, Drinking W ater	EZZ0142A	n/a	36.53
	Radium-226, SM, 19th edition, 7500RaC:				
		Radium-226, Drinking W ater	EZZ0146A	n/a	43.24
	Radium-228, SM, 19th edition, 7500 RaD:				
		Radium-228, Drinking W ater	EZZ0147A	n/a	101.74
	Strontium-89 or 90, EPA method 905.0:				
		Strontium-89 or 90, Drinking W ater	EZZ0150A	n/a	152.89
	Tritium, EPA method 906.0:				
		Tritium, Drinking W ater	EZZ0148A	n/a	73.19
	Uranium isotopes, SM, 19th edition, 7500UC:				
		Uranium Isotopes, Drinking W ater	EZZ0141A	n/a	104.81
Environmental	**Analysis of Food or Food Products: Inorganic Analysis**		**Procedure No.**	**CPT**	**Cost**
	Added Water, Association of analytical Communities (AOAC) calculation:				
		Added W ater	EZZ0027A	n/a	5.34
	Deterioration of canned products, AOAC chart:				
		Deterioration, Canned Products	EZZ0032A	n/a	9.91
	Fat, paly screen, AOAC method 964.12:				
		Fat, Paly Screen	EZZ0034A	n/a	61.61
	Fat, soxhlet extraction, USDA method Fat 1:				
		Fat, Soxhlet Extraction	EZZ0035A	n/a	106.80
	Filth, AOAC method 941.16:				
		Filth	EZZ0036A	n/a	40.82
	Food Coloring AOAC method 988.13:				
		Food Coloring	EZZ0042A	n/a	131.63
	Gluten		EZZ0227A	n/a	92.11
	Insect Identification, Food and Drug Administration (FDA) Technical Bulletin # 2:				
		Insect ID	EZZ0043A	n/a	88.92
	Meat protein, AOAC calculation:				
		Meat Protein	EZZ0045A	n/a	5.34
	Moisture (total water) USDA M01 method:				
		Moisture (Total W ater)	EZZ0046A	n/a	63.00

	pH of food products, USDA PHM:				
		pH of Food Products	EZZ0051A	n/a	43.12
	Protein, total USDA PRO1:				
		Protein, Total	EZZ0054A	n/a	81.14
	Salt, USDA SLT:				
		Salt	EZZ0057A	n/a	85.81
	Sulfite AOAC 980.17:				
		Sulfite	EZZ0063A	n/a	28.27
	Water Activity, AOAC method 978.18:				
		W ater Activity	EZZ0066A	n/a	33.22
Environmental	**Analysis of Food or Food Products: Metals Analysis**		**Procedure No.**	**CPT**	**Cost**
	Sample preparation fee - total recoverable metals digestion, EPA methods 200.2, 200.3, or SW-846 method 3050B:				
		Sample preparation fees, total recoverable metals digestion, EPA Methods 200.2, 200.3, SW -846 method	EZZ0189A	n/a	22.88
	Mercury, EPA method 245.1 and EPA SW-846 methods 7470A				
		Mercury, Food	EZZ0219A	n/a	37.90
	Single metal, ICP, EPA 200.7 or EPA SW-846 method 6010C:				
		Single Metal (ICP), Food	EZZ0217A	n/a	443.10
	Single metal, ICP-MS, EPA method 200.8 and EPA SW-846 method 6020A:				
		Single Metal Request (ICP-MS), Food	EZZ0218A	n/a	91.24
NOTE: A sample preparation fee applies to all food samples analyzed by ICP or ICP-MS techniques. A sample requiring both ICP and ICP-MS techniques will require two sample preparations. The total analysis fee includes the sample preparation fees 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.					
Environmental	**Identification of feces and urine stains: Inorganic Analysis**		**Procedure No.**	**CPT**	**Cost**
	Identification of feces stains, AOAC method 981.22:				
		ID of Feces Stains	EZZ0097A	n/a	103.63
	Identification of urine stains, AOAC methods 963.28 and 959.14:				
		Urine Stain ID	EZZ0064A	n/a	86.78
Environmental	**Solids and Soils: Metals Analysis**		**Procedure No.**	**CPT**	**Cost**
	Sample preparation fee - acid digestion of sediments, sludges, and soils, EPA SW-846 method 3050B:				
		Total Recoverable Metals Digestion, Soil/Solids	EZZ0164A	n/a	84.92
		Solid Leachate for Metals	EZZ0197A	n/a	273.88
	Mercury, sediment EPA SW-846 method 7471B:				
		Mercury, Solid/Soil	EZZ0162A	n/a	37.90
	Single metal ICP, EPA SW-846 method 6010C:				
		Single Metal Request (ICP), Solid/Soil	EZZ0168A	n/a	443.10
	Single metal ICP-MS, EPA SW-846 method 6020A:				
		Single Metal Request (ICP-MS), Solid/Soil	EZZ0167A	n/a	56.74
NOTE: A sample preparation fee applies to the analysis of all solid (soil, sediment, etc.) samples. A sample requiring both ICP and ICP-MS techniques will require two sample preparations. The total cost of the analysis will be the sample preparation fees 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. Determination of leachable metals in solid samples will require a solid leachate sample preparation procedure, as well as analysis of the leachate using non-potable water analytical methods. The total cost of the analysis will be the solid leachate sample preparation fee plus the required non-potable water preparation fee(s) and the per-element tests(s).					
Environmental	**Solids and Soils: Radiochemistry Analysis**		**Procedure No.**	**CPT**	**Cost**
	Sample preparation, DOE CHEM-TP-A.20:				
		Alpha Spec Prep, Soil	EZZ0099A	n/a	75.34
	Americum isotopes, DOE CHEM-TP-A.20:				
		Americium isotopes, Soil	EZZ0226A	n/a	59.23
	Gross alpha and beta, SM, 19th edition 7110B:				
		Gross Alpha and Beta, Soil	EZZ0102A	n/a	54.91
	Gross alpha or beta, SM, 19th edition 7110B:				
		Gross Alpha or Beta, Soil	EZZ0103A	n/a	54.91
	Gamma emitting isotopes, Ga-01-R:				
		Gamma Emitting Isotopes, Soil	EZZ0101A	n/a	65.56
	Plutonium isotopes, DOE CHEM-TP-A.20:				
		Plutonium, Soil	EZZ0104A	n/a	36.63
	Radium-226 SM, 19th edition, 7500RaC modified:				
		Radium-226, Soil	EZZ0105A	n/a	58.79
	Radium-228 SM, 19th edition, 7500RaD modified:				
		Radium-228, Soil	EZZ0106A	n/a	118.00
	Strontium-89 or 90, EPA method 905.0 modified:				
		Strontium-89 or 90, Soil	EZZ0107A	n/a	198.64
	Thorium isotopes, DOE CHEM-TPA.20:				
		Thorium Isotopes, Soil	EZZ0108A	n/a	56.42
	Tritium, EPA 520/5-86-006 H-01:				
		Tritium, Soil	EZZ0109A	n/a	57.55
	Uranium isotopes, DOE CHEM-TP-A.20:				
		Uranium Isotopes, Soil	EZZ0110A	n/a	47.54
NOTE: Except for gamma emitting isotopes and tritium, a sample preparation fee applies to the analysis of all solid (soil, sediment, etc.) samples. The total cost for the analysis will be the sample preparation fee plus the analytical method fee.					
Environmental	**Tissue and Vegetation**		**Procedure No.**	**CPT**	**Cost**
		Tissue preparation fees, fillets	EZZ0172A	n/a	19.98
		Tissue preparation fees, whole fish and crabs	EZZ0173A	n/a	46.08
NOTE: A tissue preparation (homogenization) fee applies to all seafood tissue samples analyzed for 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.					
Environmental	**Tissue and Vegetation: Metals Analysis**		**Procedure No.**	**CPT**	**Cost**

	Sample preparation fee - total recoverable metals digestion, EPA method 200.3:				
		Total Recoverable Metal Digestion, Food	EZZ0220A	n/a	22.88
		Mercury, EPA Method 7471B, tissue	EZZ0169A	n/a	37.90
		Single metal, ICP, EPA 200.7 or EPA SW -846 Method 6010C, tissue	EZZ0171A	n/a	443.10
		Single Metal, ICP-MS, EPA Method 200.8, EPA SW -846 Method 6020A, tissue	EZZ0185A	n/a	91.24
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.					
Environmental	**Tissue and Vegetation: Radiochemistry Analysis**		**Procedure No.**	**CPT**	**Cost**
	Sample preparation, DOE CHEM-TP-A.20:				
		Alpha Spec Prep, Vegetation/Tissue	EZZ0111A	n/a	75.34
	Americium isotopes, DOE CHEM-TP-A.20:				
		Americium Isotopes, Vegetation/Tissue	EZZ0225A	n/a	59.23
	Gamma emitting isotopes, Ga-01-R:				
		Gamma Emitting Isotopes, Vegetation/Tissue	EZZ0112A	n/a	76.47
	Gross alpha and beta, SM, 19th edition 7110B:				
		Gross Alpha and Beta, Vegetation/Tissue	EZZ0113A	n/a	54.91
	Gross alpha or beta, SM, 19th edition 7110B:				
		Gross Alpha or Beta, Vegetation/Tissue	EZZ0114A	n/a	54.91
	Plutonium isotopes, DOE CHEM-TP-A.20:				
		Plutonium, Vegetation/Tissue	EZZ0115A	n/a	36.63
	Radium-226, SM, 19th edition, 7500RaC modified:				
		Radium-226, Vegetation/Tissue	EZZ0116A	n/a	58.79
	Radium-228, SM, 19th edition, 7500 RaD modified:				
		Radium-228, Vegetation/Tissue	EZZ0117A	n/a	118.00
	Strontium-89 or 90,, EPA method 905.0 modified:				
		Strontium-89 or 90, Vegetation/Tissue	EZZ0118A	n/a	198.64
	Thorium isotopes, DOE CHEM-TPA-A.20:				
		Thorium Isotopes, Vegetation/Tissue	EZZ0119A	n/a	56.42
	Tritium EPA Method 520/5-86-006 H-01:				
		Tritium, Vegetation/Tissue	EZZ0120A	n/a	57.55
	Uranium isotopes, DOE CHEM-TP-A.20:				
		Uranium Isotopes, Vegetation/Tissue	EZZ0121A	n/a	47.54
NOTE: Except for gamma emitting isotopes and tritium, a sample preparation fee applies to the analysis of all tissue and vegetation samples. The total cost for the analysis will be the sample preparation fee plus the analytical method fee.					
Environmental	**Non-Potable Water: Metals Analysis**		**Procedure No.**	**CPT**	**Cost**
	Sample preparation fee total recoverable metals digestion, EPA method 200.2 and EPA SW-846 methods 3005A, 3010A, and 3020A:				
		Total recoverable metals digestion, Non- Potable W ater	EZZ0204A	n/a	29.92
	Sample preparation fee filtration (dissolved metals), EPA SW-846 method 3005A:				
		Filtration, W ater/W astewater	EZZ0175A	n/a	22.36
	Mercury, EPA method 245.1 and EPA SW-846 method 7470A:				
		Mercury, Non-Potable W ater	EZZ0160A	n/a	28.10
	Single metal ICP EPA method 200.7 and EPA SW-846 method 6010 C:				
		Single Metal (ICP), Non-Potable W ater	EZZ0177A	n/a	114.04
	Single metal ICP-MS, EPA method 200.8 and EPA SW-846 method 6020A:				
		Single Metal (ICP-MS), Non-Potable W ater	EZZ0179A	n/a	114.04
NOTE: A sample preparation fees apply to the analysis of non-potable water samples. A sample requiring both ICP and ICP-MS techniques will require two sample preparations. The total cost of the analysis will be the required sample preparation fee(s) 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.					
Environmental	**Non-Potable Water: Radiochemistry Analysis**		**Procedure No.**	**CPT**	**Cost**
	Sample preparation, DOE CHEM-TP-A.20:				
		Alpha Spec Prep, Non-Potable W ater	EZZ0122A	n/a	75.34
	Americium isotopes, DOE CHEM-TP-A.20:				
		Americium isotopes, Non Potable W ater	EZZ0224A	n/a	59.23
	Gamma emitting isotopes Ga-01-R:				
		Gamma Emitting Isotopes, Non-Potable W ater	EZZ0124A	n/a	36.53
	Gross alpha and beta EPA method 900.0:				
		Gross Alpha and Beta, Non-Potable W ater	EZZ0151A	n/a	170.73
	Gross alpha or beta EPA method 900.0:				
		Gross Alpha or Beta, Non-Potable W ater	EZZ0125A	n/a	170.73
	Plutonium isotopes, DOE CHEM-TP-A.20:				
		Plutonium, Non-Potable W ater	EZZ0126A	n/a	36.63
	Radium-226, SM 19th edition 7500 RaC:				
		Radium-226, Non-Potable W ater	EZZ0152A	n/a	113.23
	Radium-228, SM 19th edition, 7500 RaD:				
		Radium-228, Non-Potable W ater	EZZ0153A	n/a	101.74
	Strontium-89 or 90, EPA method 905.0:				
		Strontium-89 or 90, Non-Potable W ater	EZZ0155A	n/a	152.89
	Thorium isotopes, DOE CHEM-TP-A.20:				
		Thorium Isotopes, Non-Potable W ater	EZZ0127A	n/a	56.42
	Tritium, EPA method 906.0:				
		Tritium, Non-Potable W ater	EZZ0128A	n/a	73.19
	Uranium isotopes, DOE CHEM-TP-A.20:				
		Uranium Isotopes, Non-Potable W ater	EZZ0096A	n/a	47.54

NOTE: A sample preparation fee applies to the analysis of non-potable water samples for americium isotopes, plutonium isotopes, and thorium isotopes. The total cost for the analysis will be the sample preparation fee plus the analytical method fee.					
Environmental	**Wipes, Filters and Cartridges: Radiochemistry**		**Procedure No.**	**CPT**	**Cost**
	Sample preparation, DOE CHEM-TP-A.20:				
		Alpha Spec Prep, W ipe/Filter/Cartridge	EZZ0129A	n/a	75.34
	Americium isotopes, DOE CHEM-TP-A.20:				
		Americium Isotopes, W ipe/Filter/Cartridge	EZZ0223A	n/a	59.23
	Gamma emitting isotopes Ga-01-R:				
		Gamma Emitting Isotopes, W ipe/Filter/Cartridge	EZZ0131A	n/a	28.84
	Gross alpha and beta, EPA method 900.0:				
		Gross Alpha and Beta, W ipe/Filter/Cartridge	EZZ0132A	n/a	9.66
	Gross alpha or beta, EPA method 900.0				
		Gross Alpha or Beta, W ipe/Filter/Cartridge	EZZ0133A	n/a	9.66
	Plutonium isotopes, DOE CHEM-TP-A.20:				
		Plutonium, W ipe/Filter/Cartridge	EZZ0134A	n/a	36.63
	Radium-226, SM 19th edition 7500 RaC modified:				
		Radium-226, W ipe/Filter/Cartridge	EZZ0135A	n/a	58.79
	Radium-228, SM 19th edition, 7500 RaD modified:				
		Radium-228, W ipe/Filter/Cartridge	EZZ0136A	n/a	118.00
	Strontium-89 or 90, EPA method 905.0 modified:				
		Strontium-89 or 90, W ipe/Filter/Cartridge	EZZ0137A	n/a	198.64
	Thorium isotopes, DOE CHEM-TP-a.20:				
		Thorium Isotopes, W ipe/Filter/Cartridge	EZZ0138A	n/a	56.42
	Tritium, EPA 906.0 modified:				
		Tritium, W ipe/Filter/Cartridge	EZZ0139A	n/a	73.19
	Uranium isotopes, DOE CHEM-TP-A.20:				
		Uranium Isotopes, W ipe/Filter/Cartridge	EZZ0140A	n/a	47.54
NOTE: Except for gamma emitting isotopes and tritium, a sample preparation fee applies to the analysis of all wipe, filter, or cartridge samples. The total cost for the analysis will be the sample preparation fee plus the analytical method fee.					
General Laboratory Miscellaneous Fees:					
		Thermometer Calibration	MZZ0424A	n/a	12.23
		Quality Control: Spore Ampoules	MZZ0516A	n/a	17.60
		Acid Fast Bacilli (AFB) Shipping/Handling Charge	MHC0006A	n/a	50.20
		Composite/storage fee for Chemistry	n/a	n/a	19.23
		Special specimen processing and storage of clinical specimens	n/a	n/a	25.00
Environmental Non-Human Miscellaneous Fees:					
		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.			
		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.			
		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.			
		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 client's request.			

DSHS Laboratory Services Section
FEE SCHEDULE

South Texas (STL) Laboratory

CLIA ID: 45D0503753
CAP ID: 2148801
Tax ID # 32-0113643
NPI # 190-282-4881
Effective (October 01, 2016)
DSHS LABORATORY SERVICES SECTION FEE SCHEDULE - South Texas Laboratory

		HUMAN TESTING:			
NOTE: Specimens that must be sent to a reference laboratory for testing will be billed at the reference laboratory price plus an additional $3.00 handling fee.					
South Texas Laboratory	**Clinical Chemistry**	**Procedure Name**	**Procedure No.**	**CPT**	**Cost**
		Alanine Amino Transferase (ALT)	HZZ0004	84460	1.34
		Albumin, serum	HZZ0001	82040	1.27
		Alkaline phosphatase	HZZ0003	84075	1.37
		Amylase, serum	HZZ0005	82150	7.37
		Aspartate aminotransferase (AST)	HZZ0006	84450	1.32
		Bilirubin, Direct	HZZ0007	82248	1.69
		Bilirubin, total	HZZ0008	82247	1.30
		Bilirubin, Total & Direct Profile	PZZ0002	82247/82248	2.44
		Blood urea nitrogen (BUN)	HZZ0009	84520	1.48
		Calcium	HZZ0010	82310	1.64
		Carbon dioxide (CO2)	HZZ0013	82374	1.35
		Chloride, serum	HZZ0011	82435	1.35
		Cholesterol:			
		total	HZZ0012	82465	1.36
		High-density lipoprotein (HDL)	HZZ0018	83718	1.37
		Low-density lipoprotein (LDL)	HZZ0055	83721	2.20
		Creatine kinase (CK) assay	HZZ0016	82550	2.79
		Creatinine assay	HZZ0002	82565	1.30
		Electrolyte panel	HZZ0047	80051	2.83
		Gamma-glutamyl transferase (GGT)	HZZ0014	82977	3.90
		Glucose	HZZ0015	82947	1.34
		Glucose tolerance test, 2 hour	HZZ0044	82951	1.37
		Glucose postprandial, 0 and 2 hours	HZZ0017	82950	1.34
		Hepatic function panel	HZZ0051	80076	2.47
		Hemoglobin A1C	HZZ0054	83036	10.37
		Iron binding capacity, total (TIBC)	HZZ0056	83550	8.55
		Iron, total	HZZ0019	83540	7.08
		Lactic acid dehydrogenase (LDH)	HZZ0020	83615	8.17
		Lipase	HZZ0021	83690	20.43
		Lipid profile panel	HZZ0050	80061	8.84
		Magnesium	HZZ0022	83735	7.82
		Basic Metabolic panel	HZZ0052	80048	3.65
		Comprehensive Metabolic panel	HZZ0053	80053	6.39
		Phosphorus	HZZ0023	84100	11.56
		Potassium	HZZ0024	84132	1.35
		Protein, total	HZZ0026	84155	1.41
		Renal function panel	HZZ0049	80069	18.13
		Sodium	HZZ0025	84295	1.35
		Triglycerides	HZZ0027	84478	1.36
		Tuberculosis Custom Panel-	PZZ0004	84075, 84550, 82247, 84450, 84460,82465,8256 5,84520, 82977	10.36
		Uric acid	HZZ0028	84550	4.07
Emergency Preparedness Human and Non-Human Testing:					

Emergency Preparedness: Biothreat specimens and testi ng requests accepted from Law Enforcement Officials Only. Please Contact the Emergency Preparedness Branch of the DSHS South Texas Laboratory for more information.

South Texas Laboratory	**Hematology**	**Procedure Name**	**Procedure No.**	**CPT**	**Cost**
		CBC complete, automated with differential	HZZ0057	85025	1.51
		Differential, manual	HZZ0058	85007	9.89
		Hematocrit	HZZ0038	85014	6.01
		Hemoglobin, total	HZZ0037	85018	6.01
		Peripheral Smear Review	HZZ0071	85008	7.59
		Sedimentation rate	HZZ0039	85652	11.38

South Texas Laboratory	**Microbiology**	**Procedure Name**	**Procedure No.**	**CPT**	**Cost**
		Mycobacteriology, Acid fast bacillus (AFB):			
		concentration	HZZ0073	87015	4.31
		culture, any source	HZZ0093	87116	49.89
		identification of AFB isolate, DNA probe	HZZ0075	87149	44.63
		identification, referred isolates, DNA probe	HZZ0075	87149	44.63
		smear only	HZZ0074	87206	5.09
		Nucleic acid amplification for Mycobacterium tuberculosis (M.tuberculosis) complex	HZZ0144	87556	$166.70
		Drug susceptibility studies:			
		conventional susceptibility (each drug)	HZZ0117	87190	14.06
		MGIT susceptibility (each drug)	HZZ0118	87188	43.47
		MGIT susceptibility (each drug)PZA	HZZ0119	87188	92.69
		Serology, Syphilis:			
		Rapid plasma reagin (RPR):			
		screen (qualitative)	HZZ0105	86592	7.99
		titer (quantitative)	HZZ0106	86593	7.99
		Confirmation particle agglutination (TP-PA)	HZZ0107	86780	9.30

South Texas Laboratory	**Special chemistry**	**Procedure Name**	**Procedure No.**	**CPT**	**Cost**
		Ferritin	HZZ0029	82728	22.31
		Follicle stimulating hormone (FSH)	HZZ0031	83001	15.10
		Leuteinizing hormone (LH)	HZZ0032	83002	17.83
		Prolactin	HZZ0072	84146	18.07
		Prostate specific antigen (PSA), total	HZZ0033	84153	27.90
		Thyroxine(T4), Free	HZZ0030	84439	10.89
		Thyroxine(T4), total	HZZ0034	84436	35.53
		Thyroid Hormone (T3) uptake	HZZ0036	84479	23.67
		Thyroid stimulating hormone (TSH)	HZZ0035	84443	9.41
		Tri-iodothyronine (T3), free	HZZ0112	84481	19.10

South Texas Laboratory	**Urinalysis**	**Procedure Name**	**Procedure No.**	**CPT**	**Cost**
		Microscopy with urinalysis (UA)	HZZ0067	81001	32.25
		Rheumatoid factor	HZZ0043	86430	4.73
		Urinalysis, no reflex	HZZ0059	81003	5.24
		Urine microalbumin, random	HZZ0040	82044	5.69
		Urine Microscopic Analysis	HZZ0068	81015	5.54

		NON-HUMAN TESTING:			
South Texas Laboratory	**Environmental**	**Procedure Name**	**Procedure No.**	**CPT**	**Cost**
		Water bacteriology, potable water	HZZ0090	Non-Human test	8.82

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Laboratory Tests for Diseases/Agents

Biochemistry and Genetics - Clinical Chemistry Tests

Blood Lead

Method: Graphite Furnace Atomic Absorption Spectrophotometer

Reporting

Results Available: 4-5 working days after receipt of specimen

Contact #: (512) 776-7578 or (888) 963-7111 ext. 7578

Reference

Reference Range: <5.0 µg/dL

Diagnostic Information: Small amounts of blood lead can be damaging to the development of a child.

Note: Any screening capillary Blood Lead Level (BLL) above 5.0 µg/dL must be confirmed with a venous sample.

Interpretation: For information on how to interpret and follow up on blood lead levels, view form Pb-109: Reference for Followup Blood Lead Testing and Medical Case Management (http://www.dshs.state.tx.us/lead/pdf_files/pb_109_physician_reference.pdf).

Specimen/Supply Requirements

Specimen Collection: EDTA whole blood by venous (http://www.dshs.state.tx.us/lab/cc_spec-col.shtm#venousCollections) or fingerstick (http://www.dshs.state.tx.us/lab/cc_spec-col.shtm#fingerstickHeelstickCollections) collection. Consult with the laboratory about specimen collection, handling, and submission requirements before selecting supplies/equipment for use in venous and fingerstick blood collection.

- The preferred specimen is a 2mL K2 EDTA lavender top vacuum tube collected by venipuncture. Fill blood collection tubes to manufacturer's stated fill volume.
- An acceptable screening specimen is a capillary K2 EDTA lavender top collected by fingerstick.
  - To avoid contamination during collection by lead present on the skin, soap and water should be used to clean the collector's and the patient's hands prior to specimen collection.
- The diagnostic or followup specimen must be collected by venipuncture.

Required Request Form: G-THSTEPS for THSteps Medicaid; G-1B for traditional Medicaid, and other payor sources.

Causes for Rejection: Include but are not limited to:

- Submission form not included with specimen.
- No specimen included with submission form.
- Demographic information is missing or incorrect.
- Specimen identification is missing or incorrect.

- Incorrect blood collection tube used.
- Specimen volume is insufficient or excessive.
- Specimen is clotted.
- Specimen is broken or leaking.
- Specimen is not mailed or shipped in a timely or proper manner.
- Specimen is decomposed.
- Specimen is collected in an expired blood collection tube.

For help on how to avoid these causes for rejection, go to http://www.dshs.state.tx.us/lab/cc_spec-col.shtm

Specimen Submission

Shipping Requirements:

- Mail or ship specimens at ambient temperature the day of collection or the next day.
- Specimens may be refrigerated until shipped.
- Maintain specimen integrity by NOT freezing whole blood specimens and by protecting from high temperature environments (such as mail vans and drop boxes) by delivering specimens inside the post office, especially in the summer.
- For detailed mailing and shipping instructions, refer to Packaging and Shipping Blood Tubes
- (http://www.dshs.state.tx.us/lab/cc_spec-col.shtm).

Billing

CPT Code: 83655

Fees: http://www.dshs.state.tx.us/lab/fees.shtm

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: 4-5 working days after receipt of specimen

Contact #: (512) 776-7578 or (888) 963-7111, ext. 7578

Reference

Reference Range:

Adults	**Children**
Cholesterol.....<200 mg/dL	Cholesterol.....<170 mg/dL
Triglyceride .....<150 mg/dL	Triglyceride.....<150 mg/dL
HDL Cholesterol..... >39 mg/dL	HDL Cholesterol.....>39 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 the diagnosis and treatment of patients with diabetes mellitus, nephrosis, liver obstruction, and 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:

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

  Collect specimen in red top tube.
  Allow specimen to clot.
  Centrifuge and remove serum from clot within 2 hours of collection. Transfer at least 1mL of serum to a plastic transport tube and freeze. Plastic transport tube can be a plain blood collection tube.

- Acceptable specimen: 7 – 10mL serum separator tube.

  Collect specimen in a serum separator tube.
  Allow specimen to clot.
  Centrifuge specimen within 2 hours of collection so that gel separates serum from red cells. Transfer at least 1mL of serum to a plastic transport tube and freeze. **DO NOT FREEZE** gel separator tubes.

Required Request Form: G-THSTEPS for THSteps Medicaid, G-1B for traditional Medicaid and other payor sources.

Causes for Rejection: Include but not limited to:

- Submission form not included with specimen.

- No specimen included with submission form.
- Demographic information is missing or incorrect.
- Specimen identification is missing or incorrect.
- Specimen quantity is insufficient for testing.
- Specimen is hemolyzed.
- Specimen is not shipped in a timely or proper manner.

For help on how to avoid these causes for rejection, go to http://www.dshs.state.tx.us/lab/cc_spec-col.shtm.

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 specimen submission form, record the date and time that the specimen was removed from the freezer for shipment. Batching of specimens for shipment is recommended.
- For more information on how to correctly package and ship specimens, refer to Cholesterol, Lipid, and Glucose Packing Diagram (http://www.dshs.state.tx.us/lab/mrs_shipping.shtm#lipid).

Billing

CPT Code: 80061

Fees: http://www.dshs.state.tx.us/lab/fees.shtm

Diabetes/Glucose

Method/Procedure: Enzymatic measure using UV/Visual Spectrophotometry

Reporting

Results Available: 4-5 working days after receipt of specimen

Contact #: (512) 776-7578 or (888) 963-7111, ext. 7578

Reference

Reference Range:

Random.....<140 mg/dL
1 Hr Glucose…....<140 mg/dL
2-Hr PP.....<140 mg/dL
Fasting……....70-105 mg/dL

1-Hr Glucose Tolerance……<180 mg/dL
2-Hr Glucose Tolerance……<155 mg/dL
3-Hr Glucose Tolerance……<140 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:

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

  Collect specimen in red top tube.
  Allow specimen to clot.
  Centrifuge and remove serum from clot within 2 hours of collection. Transfer at least 1mL of serum to a plastic transport tube and freeze. Plastic transport tube can be a plain blood collection tube.

- Acceptable specimen: 7 – 10mL serum separator tube.

  Collect specimen in a serum separator tube.
  Allow specimen to clot.
  Centrifuge specimen within 2 hours of collection so that gel separates serum from red cells. Transfer at least 1mL of serum to a plastic transport tube and freeze. DO NOT FREEZE gel separator tubes.

- Acceptable specimen: gray top tube, spun down and plasma removed within 24 hours of collection.

  Transfer at least 1mL of plasma to a plastic transport tube and freeze.

Required Request Form: G-THSTEPS for THSteps Medicaid, G-1B for traditional Medicaid and other payor sources.

Causes for Rejection: Included but not limited to:

- Submission form not included with specimen.
- No specimen included with submission form.

- Demographic information is missing or incorrect.
- Specimen identification is missing or incorrect.
- Specimen quantity is insufficient for testing.
- Specimen is hemolyzed.
- Specimen is not shipped in a timely or proper manner.

For help on how to avoid these causes for rejection, go to http://www.dshs.state.tx.us/lab/cc_spec-col.shtm.

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 submission form, record the date and time that the specimen was removed from the freezer for shipment.
- Batching of specimens for shipment is recommended. For more information on how to correctly package and ship specimens, refer to Cholesterol, Lipid, and Glucose Packing Diagram (http://www.dshs.state.tx.us/lab/mrs_shipping.shtm#lipid).

Billing

CPT Code: 82947

Fees: http://www.dshs.state.tx.us/lab/fees.shtm

Hemoglobin Electrophoresis

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

Method: Isoelectric focusing

Reporting

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

Contact #: (512) 776-7578 or (888) 963-7111, ext. 7578

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.

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: 1-2 dried blood spots

Specimen Collection Card: The Snap-Apart filter paper card may be ordered from the Container Preparation Group at 512-776-7661 or (888) 963-7111 ext. 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 1-2 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 submission form and submit with specimen.

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 1-2 adequately filled circles, patient name/date of collection, and a complete and accurate specimen submission 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.
- Laboratory accident.

For help on how to avoid these causes for rejection, go to http://www.dshs.state.tx.us/lab/cc_spec-col.shtm.

Specimen Submission

Required Request Form: G-THSTEPS for THSteps Medicaid, G-1B for traditional Medicaid and other payor sources.

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 mailing container for shipping Hemoglobin Electrophoresis specimens.

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

Billing

CPT Code: 83020

Fees: http://www.dshs.state.tx.us/lab/fees.shtm

Total Hemoglobin

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

Reporting

Results Available: 4-5 working days after receipt of specimen

Contact #: (512) 776-7578 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.

Reference Range: 11-16 µg/dL

Specimen/ Supply Requirements

Specimen Collection: EDTA whole blood by capillary (http://www.dshs.state.tx.us/lab/cc_spec-col.shtm#fingerstickHeelstickCollections) or venous (http://www.dshs.state.tx.us/lab/cc_spec-col.shtm#venousCollections) collection. Fill blood collection tubes to manufacturer's stated fill volume.

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

Causes for Rejection: Include but are not limited to:

- Submission form not included with specimen.
- No specimen included with submission form.
- Demographic information is missing or incorrect.
- Specimen identification is missing or incorrect.
- Incorrect blood collection tube used.
- Specimen volume is insufficient or excessive.
- Specimen is clotted.
- Specimen is broken or leaking.
- Specimen is not mailed or shipped in a timely or proper manner.
- Specimen is decomposed.
- Specimen is collected in an expired blood collection tube.

For help on how to avoid these causes for rejection, go to http://www.dshs.state.tx.us/lab/cc_spec-col.shtm.

Specimen Submission

Required Request Form: G-THSTEPS for THSteps Medicaid, G-1B for traditional Medicaid and other payor sources.

Shipping Requirements: Mail or ship specimens at ambient temperature the day of collection or the next day.
Specimens may be refrigerated until shipped.
Maintain specimen integrity by NOT freezing whole blood specimens and by protecting from high temperature environments (such as mail vans and drop boxes) by delivering specimens inside the post office, especially in the summer.
For detailed mailing and shipping instructions, refer to Packaging and Shipping Blood Tubes (http://www.dshs.state.tx.us/lab/mrs_shipping.shtm#Tubes).

Billing
CPT Code: 85018
Fees: http://www.dshs.state.tx.us/lab/fees.shtm

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 oxidation 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 academia (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)** **Hemoglobinopathies:** sickle cell anemia (Hb S/S), sickle beta thalassemia (Hb S/A), and sickle-hemoglobin C disease (Hb S/C) **Cystic Fibrosis (CF)** **Severe Combined Immunodeficiency (SCID)**
Reporting
Results Available: Results available within 4-7 working days of receipt in the laboratory. **Contact:** Laboratory Reporting Section (512) 776-7578 Current users of the Texas Newborn Screening Web Application may log in to access results here: https://dshsnbsweb.dshs.state.tx.us/toolbar/login.aspx. If not a user of the Texas Newborn Screening Web Application, visit NBS Remote Data Services Home (http://www.dshs.state.tx.us/lab/nbsRDS.shtm) for information on signing up.
Reference
Method/Procedure: **Tandem Mass Spectrometry to detect:** Amino Acid Disorders, Fatty Acid Oxidation Disorders, and Organic Acid Disorders **Immunofluorometric Microtiter Assays to detect:** Congenital Hypothyroidism, and Congenital Adrenal Hyperplasia

Fluorometric Assay to detect: Galactosemia

Colorimetric Microtiter Assay to detect: Biotinidase Deficiency

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

Immunofluorometric Microtiter Assay and Multiplex Polymerase Chain Reactions to detect: Cystic Fibrosis

Real-time Quantitative Polymerase Chain Reaction to detect: Severe Combined Immunodeficiency (SCID)

Reference Range: Normal

Limitations:

Transfusion may alter all Newborn Screening results.

Total Parenteral Nutrition (TPN) (given to sick or premature infants) may cause inaccurate results.

EDTA, Citrate and heparin anticoagulants must not be used during the collection of the specimen.

Anticoagulants will 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.

Interpretation: Included in the Result Report. Result Report Examples: Normal (http://www.dshs.state.tx.us/lab/NormalMailer.pdf, PDF 226kb), Abnormal (http://www.dshs.state.tx.us/lab/AbonormalMailer.pdf, PDF 232kb).

Diagnostic Information:

Amino Acid, Fatty Acid Oxidation, and Organic Acid Disorders: All specimens are screened to detect abnormalconcentrations 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 Oxidation Disorders and Organic Acid Disorders.

Galactosemia: All specimens are screened to detect decreased levels of galactose-1-phospate uridyl transferase (GALT) as an indicator of galactosemia.

Congenital Hypothyroidism: All specimens are screened to detect 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). Biotinidase Deficiency: All specimens are screened to detect reduced 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 forwarded for DNA testing. Mutations for hemoglobin types S, C, E, D and two beta-thalassemias can be detected by polymerase chain reaction and restriction fragment length polymorphism. Family studies for abnormal results are available for a fee, upon request. Contact DSHS at (512) 776-7333 for further information.

Cystic Fibrosis: All specimens are screened to detect elevated concentrations of Immunoreactive Trypsinogen (IRT) as an indicator of Cystic Fibrosis. Specimens screened for IRT that meet certain retest requirements are also screened to detect the presence of any of 40 mutations and 2 variants in the Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) gene.

Severe Combined Immunodeficiency: All specimens are screened to detect reduced presence or absence of T-cell receptor excision circles (TREC) as an indicator of SCID.

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.

To order forms and supplies, contact Laboratory Supply:
Phone: 512-776-7661
Fax: 512-776-7672
Email: ContainerPrepGroup@dshs.state.tx.us

Order Form for NBS Supplies (http://www.dshs.state.tx.us/lab/nbsSuppliesOrderFrm.pdf, PDF 23kb)

Causes for Rejection include:

- use of expired specimen collection device
- no date of collection provided
- 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)

For examples and tips on how to avoid the most common unsatisfactory qualities: http://www.dshs.state.tx.us/lab/unsatExamples.shtm

To view a newborn screening specimen collection training video and specimen collection training materials, visit the Healthcare Provider Resources (http://www.dshs.state.tx.us/lab/nbsHCRes.shtm) page.

Specimen Submission

Completely fill in all patient demographic information on the Specimen Collection Card (NBS3 or NBS4).

Note: Mother or Baby Lastname, DOC and means of determining age of baby at time of collection are required fields.

DRIED FILTER PAPER BLOOD SPECIMEN SHIPPING REQUIREMENT:

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!***

Note: If placing more than 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.

For more information on Newborn Screening

Newborn Screening Laboratory (http://www.dshs.state.tx.us/lab/newbornscreening.shtm)

Newborn Screening Clinical Care Coordination (http://www.dshs.state.tx.us/newborn/)

Billing

CPT Codes: S3620 and 83788 Newborn Screening CPT Code FAQ (http://www.dshs.state.tx.us/lab/nbsFAQ.shtm#bill)	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

Phenylketonuria (PKU) - Dietary Monitoring

Test Includes
Phenylketonuria (PKU) - Dietary Monitoring (including phenylalanine and tyrosine)
Reporting
Results Available: Within 2-3 working days after receipt of specimen
Contact: Laboratory Reporting Section (512) 776-7578
Reference
Method/Procedure: Tandem Mass Spectrometry
Reference Range: Normal
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 of the amino acids phenylalanine and tyrosine.
Specimen/Supply Requirements
Required Request Form: G-1B **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 and the collection instruction sheet 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, contact Laboratory Supply:** Phone: 512-776-7661 Fax: 512-776-7672 Email: ContainerPrepGroup@dshs.state.tx.us Order Form for NBS Supplies (http://www.dshs.state.tx.us/lab/nbsSuppliesOrderFrm.pdf, PDF 23kb)
Causes for Rejection Include: • use of expired specimen collection device • no date of collection provided • 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

Specimen Collection Training Video (http://www.dshs.state.tx.us/JwPlayer.aspx?video=http://video.dshs.state.tx.us/newborn/NewbornRev.flv&image=/uploadedImages/Content/Video/newborn/NewbornRev.jpg&captions.file=http://www.dshs.state.tx.us/captions/newborn/NewbornRev.dfxp.xml&EkTB_iframe=true&modal=true&height=490&width=650)

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.

Specimen Drying Instructions: Allow filter spots to air-dry completely (4 hrs.) on a horizontally level, nonabsorbent, open surface at ambient temperature (15-22° C). Keep the specimen away from heat and direct sunlight.

DRIED FILTER PAPER BLOOD SPECIMEN SHIPPING REQUIREMENT:

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!***

Note: If placing more than 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Hemoglobin DNA Test: Hb, S, C, E, D or O-Arab, Common Beta-Thalassemia Mutation, Beta-Globin Gene Sequencing

Test Includes
Hemoglobin S, C, D-Los Angeles, E, and O-

(http://www.dshs.state.tx.us/JwPlayer.aspx?video=http://video.dshs.state.tx.us/newborn/NewbornRev.flv&image=/uploadedImages/Content/Video/newborn/NewbornRev.jpg&captions.file=http://www.dshs.state.tx.us/captions/newborn/NewbornRev.dfxp.xml&EkTB_iframe=true&modal=true&height=490&width=650)

See Collection tips for Venipuncture (http://www.dshs.state.tx.us/lab/cc_spec-col.shtm)

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

DRIED FILTER PAPER BLOOD SPECIMEN SHIPPING REQUIREMENT:

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!***

  - **Note:** If placing more than 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.

WHOLE BLOOD SPECIMEN SHIPPING REQUIREMENTS:

U.S. Postal regulations require ***Triple*** containment of whole blood specimens.

- Refrigerate sample until shipment.
- Whole blood specimens must be shipped overnight at room temperature or refrigerated and received within 7 days of collection.

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Phenylketonuria (PKU) - Dietary Monitoring

Test Includes
Phenylketonuria (PKU) - Dietary Monitoring (including phenylalanine and tyrosine)
Reporting
Results Available: Within 2-3 working days after receipt of specimen
Contact: Laboratory Reporting Section (512) 776-7578
Reference
Method/Procedure: Tandem Mass Spectrometry
Reference Range: Normal
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 of the amino acids phenylalanine and tyrosine.
Specimen/Supply Requirements
Required Request Form: G-1B **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 and the collection instruction sheet 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, contact Laboratory Supply:** Phone: 512-776-7661 Fax: 512-776-7672 Email: ContainerPrepGroup@dshs.state.tx.us Order Form for NBS Supplies (http://www.dshs.state.tx.us/lab/nbsSuppliesOrderFrm.pdf, PDF 23kb)
Causes for Rejection Include: • use of expired specimen collection device • no date of collection provided • 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

Specimen Collection Training Video (http://www.dshs.state.tx.us/JwPlayer.aspx?video=http://video.dshs.state.tx.us/newborn/NewbornRev.flv&image=/uploadedImages/Content/Video/newborn/NewbornRev.jpg&captions.file=http://www.dshs.state.tx.us/captions/newborn/NewbornRev.dfxp.xml&EkTB_iframe=true&modal=true&height=490&width=650)

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.

Specimen Drying Instructions: Allow filter spots to air-dry completely (4 hrs.) on a horizontally level, nonabsorbent, open surface at ambient temperature (15-22° C). Keep the specimen away from heat and direct sunlight.

DRIED FILTER PAPER BLOOD SPECIMENS SHIPPING REQUIREMENT:

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!***

Note: If placing more than 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Galactosemia: Common Mutation Panel

Test Includes
Galactose-1-phosphate uridyl transferase (GALT) mutation panel
Reporting
Results Available: Within 4 days of receipt **Turnaround Time:** 2 working days
Contact: (512) 776-6699
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 *G-1B form ordering information (http://www.dshs.state.tx.us/lab/MRS_forms.shtm#Microbiological)*
Causes for Rejection include: • use of expired specimen collection device • no date of collection provided • 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
Specimen Collection: View a specimen collection training video for collecting on filter paper (http://www.dshs.state.tx.us/JwPlayer.aspx?video=http://video.dshs.state.tx.us/newborn/NewbornRev.flv&image=/uploadedImages/Content/Video/newborn/NewbornRev.jpg&captions.file=http://www.dshs.state.tx.us/captions/newborn/NewbornRev.dfxp.xml&EkTB_iframe=true&modal=true&height=490&

width=650)

See Collection tips for Venipuncture (http://www.dshs.state.tx.us/lab/cc_spec-col.shtm)

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

DRIED FILTER PAPER BLOOD SPECIMENS SHIPPING REQUIREMENT:

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!***

Note: If placing more than 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.

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Cystic Fibrosis: Common Mutation Panel

Test Includes
Cystic fibrosis transmembrane conductance regulator (CFTR) mutation panel.
Reporting
Results Available: Within 5 days of receipt **Turnaround Time:** 3 working days
Contact: (512) 776-6699
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 *G-1B form ordering information (http://www.dshs.state.tx.us/lab/MRS_forms.shtm#Microbiological)*
Causes for Rejection include: • use of expired specimen collection device • no date of collection provided • 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
Specimen Collection: View a specimen collection training video for collecting on filter paper (http://www.dshs.state.tx.us/JwPlayer.aspx?video=http://video.dshs.state.tx.us/newborn/NewbornRev.f

lv&image=/uploadedImages/Content/Video/newborn/NewbornRev.jpg&captions.file=http://www.dshs.state.tx.us/captions/newborn/NewbornRev.dfxp.xml&EkTB_iframe=true&modal=true&height=490&width=650)

See Collection tips for Venipuncture (http://www.dshs.state.tx.us/lab/cc_spec-col.shtm)

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

DRIED FILTER PAPER BLOOD SPECIMENS SHIPPING REQUIREMENT:

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!***

Note: If placing more than 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.

- 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Medium-chain Acyl-CoA Dehydrogenase Deficiency (MCAD) Mutation Panel

Test Includes
Medium chain acyl-CoA dehydrogenase (MCAD) mutation panel
Reporting
Results Available: Within 7 days of receipt **Turnaround Time:** 4 working days
Contact: (512) 776-7158
Reference
Method/Procedure: Allelic Discrimination
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 MCAD DNA testing is performed in support of the Newborn Screening Program at DSHS and for other individuals. Four mutations are currently included in the panel: K304E, L59F, R123K, and N169D. These common mutations account for approximately 86% of the MCAD alleles in the Texas 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 *G-1B form ordering information* (http://www.dshs.state.tx.us/lab/MRS_forms.shtm#Microbiological)
Causes for Rejection Include: • use of expired specimen collection device • no date of collection provided • 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
Specimen Collection: View a specimen collection training video for collecting on filter paper (http://www.dshs.state.tx.us/JwPlayer.aspx?video=http://video.dshs.state.tx.us/newborn/NewbornRev.flv&image=/uploadedImages/Content/Video/newborn/NewbornRev.jpg&captions.file=http://www.dshs.state.tx.us/captions/newborn/NewbornRev.dfxp.xml&EkTB_iframe=true&modal=true&height=490&width=650)

See Collection tips for Venipuncture (http://www.dshs.state.tx.us/lab/cc_spec-col.shtm)

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

DRIED FILTER PAPER BLOOD SPECIMENS SHIPPING REQUIREMENT:

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!***

Note: If placing more than 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.

- 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, 83896, 83898, 83912	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm
	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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Tritium

Tritium	Matrix	Air
	Method	EPA Azeotropic Distill
	Sample Size Container	Filter or Cartridge
	Preservation	None
	Holding Time	180 days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Carbon 14

Carbon 14	Matrix	Air
	Method	Liquid Scintillation
	Sample Size Container	Filter or Cartridge
	Preservation	None
	Holding Time	180 days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Bromide

Bromide	Matrix	Water
	Method	EPA 300.0
	Sample Size Container	1 Quart Plastic Container
	Preservation	None
	Holding Time	28 Days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Chloride

Chloride	Matrix	Water
	Method	EPA 300.0
	Sample Size Container	1 Quart Plastic Container
	Preservation	None
	Holding Time	28 Days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Chlorate

Chlorate	Matrix	Water
	Method	EPA 300.0
	Sample Size Container	1 Quart Plastic Container
	Preservation	None
	Holding Time	28 Days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

Color

Color	Matrix	Water
	Method	Standard Methods 2120B
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	48 hours
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

Conductance

Conductance	Matrix	Water
	Method	Standard Methods 2510B
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	28 Days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Fluoride

Fluoride	Matrix	Water
	Method	EPA 300.0
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	28 Days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Perchlorate

Perchlorate	Matrix	Water
	Method	EPA 314.0
	Sample Size Container	1 Quart Plastic Container
	Preservation	None
	Holding Time	28 Days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

pH

pH	Matrix	Water
	Method	EPA 150.1
	Sample Size Container	1 Quart Plastic Container
	Preservation	none
	Holding Time	Immediate analysis required
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Sulfate

Sulfate	Matrix	Water
	Method	EPA 300.0
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	28 Days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

Turbidity

Turbidity	Matrix	Water
	Method	EPA 180.1
	Sample Size Container	1 Quart Plastic Container
	Preservation	4° C
	Holding Time	48 Hours
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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,	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

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	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Deterioration, Canned Products

Deterioration, Canned Products	Matrix	Food Products
	Method	AOAC Chart
	Sample Size Container	N/A
	Preservation	None
	Holding Time	N/A
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Filth

Filth	Matrix	Food Products
	Method	AOAC Methods
	Sample Size Container	100 g
	Preservation	None
	Holding Time	N/A
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Salt

Salt	Matrix	Food Products
	Method	USDA SLT
	Sample Size Container	¾ Pound plastic bag
	Preservation	4° C
	Holding Time	7 Days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

Water Activity

Water Activity	Matrix	Food Products
	Method	Rotrunic Hygroskop Operations Manual
	Sample Size Container	N/A
	Preservation	None
	Holding Time	14 Days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Metals in Pottery

Cadmium Lead	Matrix	Pottery Leachate
	Method	AOAC 973.32
	Sample Size Container	Variable
	Preservation	None
	Holding Time	6 months
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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,	Matrix	Soil
	Method	EPA 901.1
	Sample Size Container	400 gram Plastic Tub
	Preservation	None
	Holding Time	180 days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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,	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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Tritium

Tritium	Matrix	Soil
	Method	EPA Azeotropic Distillation
	Sample Size Container	400 gram Plastic Tub
	Preservation	None
	Holding Time	180 days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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-	Matrix	Vegetation/Tissue
	Method	EPA 901.1
	Sample Size Container	1 gallon plastic bag
	Preservation	None
	Holding Time	180 days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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, 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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Tritium

Tritium	Matrix	Vegetation/Tissue
	Method	EPA Azeotropic Distillation
	Sample Size Container	1 gallon plastic bag
	Preservation	None
	Holding Time	180 days
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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 laboratory within 5 days of collection.
	Holding Time	180 days after preservation in the laboratory.
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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 laboratory within 5 days of collection.
	Holding Time	180 days after preservation in the laboratory.
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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,	Matrix	Water
	Method	EPA 901.1
	Sample Size Container	1 Gallon Plastic
	Preservation	None - Sample must be submitted to the laboratory within 5 days of collection.
	Holding Time	180 days after preservation in the laboratory.
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm
	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, 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 laboratory within 5 days of collection.
	Holding Time	180 days after preservation in the laboratory.
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

Radium 228

Radium 228	Matrix	Water
	Method	EPA 904.0
	Sample Size Container	1 Gallon Plastic
	Preservation	None - Sample must be submitted to the laboratory within 5 days of collection.
	Holding Time	180 days after preservation in the laboratory.
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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 laboratory within 5 days of collection.
	Holding Time	180 days after preservation in the laboratory.
	Fee	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

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	http://www.dshs.state.tx.us/lab/fees.shtm

Acanthamoeba (Culture)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** 512-776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Acanthamoeba (Microscopic-Direct Exam; Trichrome Stained Slide)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** 512-776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7657
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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Adenovirus (Culture-Isolation)

Test Includes: Cell Culture	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-776-7594
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 < 48 hours after collection, store and send at -20° C. Arriving > 48 hours after collection, store and send on dry ice.
Causes for Rejection: Specimens submitted on a preservative such as formalin. Specimens that have leaked and possibly contaminated each other in the same packer. Specimens collected with a wood or calcium alginate swab. Specimens received on expired viral transport media. Clinical specimens received at room temperature. Specimens for viral isolation received cold and more than 2 days after collection.	**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-2V	**Specimen Handling:** Universal precautions
Transport Temperature: Transport cold on ice packs within 48 hours of collection. If specimens will not be received at the laboratory within 48 hours of collection, specimens should be frozen and shipped on dry ice.	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87253	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

Adenovirus (Culture-Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-776-7594
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-2V	**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:** http://www.dshs.state.tx.us/lab/fees.shtm

Aerobic Bacterial Culture (Isolation)

Test Includes: Conventional biochemical methods.	
Reporting	
Results Available:7-21 days	**Contact #s:** (512) 776-7582
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),	**Shipping Requirements:** Triple contained in

<24 hours unless in transport medium.	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:** http://www.dshs.state.tx.us/lab/fees.shtm

Aerobic Bacterial Culture, Stool (Isolation)

Test Includes: Conventional biochemicals, EHEC Toxin test, PCR	
Reporting	
Results Available: 3-7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Aerobic Bacterial Culture, (Identification)

Test Includes: Conventional biochemicals for identification.	
Reporting	
Results Available: 4-21 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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

Test Includes: Culture	
Reporting	
Results Available: 10 days or when positive results is determined.	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Amebiasis Entamoeba histolytical/Entamoeba disbar Staining (Identification)

Test Includes: Concentration and trichrome staining	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7560
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) 776-7611. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Anaerobic Bacterial Culture, Special (Isolation)

Test Includes: Rapid ANA II, API AnaID, GLC, conventional biochemicals	
Reporting	
Results Available: 7-14 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Anaerobic Bacterial Culture (Identification)

Test Includes: Rapid ANA II, API anaID, GLC, conventional biochemicals	
Reporting	
Results Available: 7-14 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7185
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Anthrax Culture (Isolation)

Test Includes: Conventional biochemical methods, PCR, DFA	
Reporting	
Results Available: 3-5 days	**Contact #s:** (512) 776-7582
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) 776-7185. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Anthrax Culture (Identification)

Test Includes: Conventional biochemical methods, PCR, DFA	
Reporting	
Results Available: 3-5 days	**Contact #s:** (512) 776-7185
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) 776-7185. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Anthrax (Serological)

Test Includes: EIA for total anthrax antibodies	
Reporting	
Results Available: 3 weeks	**Contact #s:**512-776-7760
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, 512-776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Arizona Salmonella (Arizona) Culture (Isolation)

Test Includes: Conventional biochemicals, serological typing	
Reporting	
Results Available: 3-7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7784
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Ascariasis (Microscopic - Direct Concentration)

Test Includes: Microscopic examination, direct concentration	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 776-7760
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Aspergillosis (Culture - Isolation)

Test Includes: Isolation of fungus and identification of Aspergillus species by morphological tests	
Reporting	
Results Available: 28 days	**Contact #s:** 512-776-7455 for prior approval. Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Aspergillosis (Culture-Identification)

Test Includes: Morphological examination and/or physiological tests for identification of isolate	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7614
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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Bacillus cereus (Culture-Isolation)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 2-14 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Balantidiasis (Microscopic - Direct Concentration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Baywaters (Environmental)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 776-7611
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Bioterrorism agents (Environmental - Isolation)

Test Includes: Conventional biochemicals, PCR, DFA, Time-resolved Fluorescence	
Reporting	
Results Available: 3-5 days	**Contact #s:** 512-776-7185
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 776-7185 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 776-7185 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 776-7185 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 776-7185 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Blastocystis hominis (Microscopic - Driect Concentration and Trichrome stain)

Test Includes: concentration and trichrome staining	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Blastomycosis (Culture-Isolation)

Test Includes: Isolation of fungus and identification by Gen-Probe Accuprobe test	
Reporting	
Results Available: 21-28 days	**Contact #s:**512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Blastomycosis (Culture – Genetic Probe (Culture Confirmation))

Test Includes: Identification by Gen-Probe Accuprobe test.	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Blastomycosis (Serological – Complement Fixation)

Test Includes: CF test for antibodies to blastomycosis	
Reporting	
Results Available: 5-7 days	**Contact #s:** 512-776-7514
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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

Bordetella pertussis PCR

Test Includes: Real-Time PCR for Bordetella Pertussis	
Reporting	
Results Available: 1-2 days	**Contact #s:** 512-776-7735
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) 776-7111 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 512-776-7185 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 512-776-7185 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Brucellosis Culture – (Isolation)

Test Includes: Culture, PCR	
Reporting	
Results Available: 7-21 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Brucellosis Culture – Identification

Test Includes: Conventional Biochemicals	
Reporting	
Results Available: 7-14 days	**Contact #s:** (512)-776-7185
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Brucellosis (Serological – Agglutination)

Test Includes: Agglutination to detect antibodies to Brucellosis	
Reporting	
Results Available: 5-7 days	**Contact #s:** 512-776-7514
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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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

Test Includes: Real-Time PCR for Calicivirus	
Reporting	
Results Available: 1-3 days	**Contact #s:** 512-776-7735
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:** http://www.dshs.state.tx.us/lab/fees.shtm

California Encephalitis (Serological)

Test Includes: Enzyme assay for IgM and IgG antibody to California Virus	
Reporting	
Results Available: 2-3 days	**Contact #s:** 512-776-7514
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Campylobacter Culture – (Isolation)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 4-10 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Campylobacter (Culture – (Identification)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 4-10 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Candidiasis (Culture – Identification)

Test Includes: Morphological and/or biochemical identification to species level.	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-776-7586.
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Chancroid (Culture – Identification)

Test Includes: Conventional Biochemical Studies	
Reporting	
Results Available: 3-21 days	**Contact #s:** (512) 776-7582
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) 776-7582 – 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Chlamydia (Genetic Probe)

Test Includes: GEN-PROBE APTIMA COMBO 2® Assay	
Reporting	
Results Available: 2-3 days	**Contact #s:** (512) 776-7657
Reference	
Method: GEN-PROBE APTIMA COMBO 2® Assay	
Turnaround Time: 2-3 days	**Reference Range:** Negative for *Chlamydia trachomatis*
Limitations: Results dependent on adequacy of sampling. Refer to package insert of the appropriate GEN-PROBE specimen collection kit. The APTIMA COMBO 2® Assay is not intended for the evaluation of suspected sexual abuse or for other medico-legal indications.	**Interpretation:** Negative results indicate that the patient does not have detectable amounts of C. trachomatis rRNA.
Specimen Requirements	
Specimen Collection: Only specimens collected in APTIMA ®collection kits can be processed for testing. There are three kits we use for our testing; APTIMA® Urine Specimen Collection Kit for Male and Female Urine Specimens APTIMA® Unisex Swab Specimen Collection Kit for Endocervical and Male Urethral Swab Specimens APTIMA® Vaginal Swab Specimens kit	**Sample Type:** Female urine, vaginal and endocervical swab. Male urine and urethral swab.
Volume/Amount Required: Refer to package insert of APTIMA® Specimen Collection Kit for detailed directions.	**Preferred Specimen:** Urine (Male or Female); Female Endocervical Swab; Female Vaginal Swab; Male Urethral Swab
Collection/Preservation: Only swabs contained in the GEN-PROBE® APTIMA®specimen collection kit can be used to collect patient specimens.	**Storage Instructions:** Store at ambient temperature.
Causes for Rejection: Wrong name on collection tube, two swabs in tube, no swab on tube, a cleaning swab or a swab not supplied by GEN-PROBE. Urine must fall between the two black indicator lines on the tube label.	**Sample Container:** APTIMA® Urine Specimen Collection Kit for Male and Female Urine Specimen,swabs APTIMA® Unisex Swab Specimen Collection Kit for Endocervical and Male Urethral Swab Specimens and APTIMA® Vaginal Swab Specimens
Sample Test Kit: GEN-PROBE APTIMA 2 COMBO Assay	**Availability:** Tested Monday – Friday.

Diagnostic Information: GEN-PROBE APTIMA COMBO 2® Assay 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 urine, vaginal swab, or endocervical swab and male urine and urethral swabs using the appropriate GEN-PROBE® APTIMA®Specimen Collection Kit. Only swabs contained in the GEN-PROBE® APTIMA® specimen collection kit can be used to collect patient specimens.	
Specimen Submission	
Required Request Form: G-2B, G-THSTEPS for THSteps Medicaid	**Specimen Handling:** body fluid handled with universal precautions
Transport Temperature: Ambient temperature (2°-30°C)	**Shipping Requirements:** In accordance with federal shipping regulations for diagnostic specimens, noninfectious.
Billing	
CPT Code: 87491	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

Cholera (Culture – Isolation)

Test Includes: Conventional biochemicals, serological typing for V. cholerae 01 and 0139.	
Reporting	
Results Available: 4-7 days.	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Cholera (Culture–Identification)

Test Includes: Conventional biochemicals and serology.	
Reporting	
Results Available: 7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Cholera (Culture – Typing)

Test Includes: Serological typing of O1 and O139	
Reporting	
Results Available: 7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Clonorchiasis (Microscopic – Direct Concentration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Clostridium difficile Culture (Identification)

Test Includes: Rapid ANA II, API anaID; GLC, conventional biochemicals	
Reporting	
Results Available: 7-10 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Clostridium perfringens (Culture - Isolation)

Test Includes: Rapid ANA II, API anaID; GLC, conventional biochemicals.	
Reporting	
Results Available: 7-10 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Clostridium perfringens (Culture Identification)

Test Includes: Rapid ANA II, GLC, conventional biochemicals	
Reporting	
Results Available: 7-10 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Clostridium perfringens Culture (Toxin Detection)

Test Includes: Toxin detection	
Reporting	
Results Available: 2 days	**Contact #s:** (512) 776-7562
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Coccidioidomycosis (Culture – Isolation)

Test Includes: Isolation of fungus and identification by Gen-Probe Accuprobe test	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Coccidioidomycosis (Culture – Genetic Probe - Culture Confirmation)

Test Includes: Identification by Gen-Probe Accuprobe Test	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

Coliform – Fecal (Culture – Quantitation)

Test Includes: Membrane filtration or Multitube fermentation	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7562
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Coliform – Total Colilert

Test Includes: Colilert 18 hour	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 776-7611
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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: 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Cryptococcosis (Culture - Identification)

Test Includes: Morphological and biochemical testing for identification to species level.	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 (776-7760). 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Cryptosporidiosis (Microscopic – Direct Concentration Acid Fast Stain)

Test Includes: Acid Fast Stain	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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

Test Includes: Acid fast stain	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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

Test Includes: Microscopic examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Cytomegalovirus (Culture - Isolation)

Test Includes: Cell Culture	
Reporting	
Results Available: 2-21 days	**Contact #s:** 512-776-7594
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Cytomegalovirus (Culture - Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 2-21 days	**Contact #s:** 512-776-7594
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

Cytomegalovirus (Microscopic – Electron Microscopy)

Test Includes: Electron microscopy	
Reporting	
Results Available: 1-2 days	**Contact #s:** 512-776-7594
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Dientamoeba fragilis (Microscopic – Trichrome Stains)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Diptheria Culture –(Isolation)

Test Includes: Conventional biochemicals, toxigencity testing	
Reporting	
Results Available: 3-7 days	**Contact #s:** (512) 776-7582
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 512-776-7582	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Diptheria Culture –(Identification)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 5-10 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Diptheria Culture – (Toxigenicity)

Test Includes: *Diphtheria* toxin testing by precipitate test.	
Reporting	
Results Available: 2-7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Diphyllobothriasis (Microscopic – Direct Concentration)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Enterobiasis – Pin Worm (Microscopic - Direct)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Enterovirus (Culture - Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-776-7594
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 < 48 hours after collection, store and send at 2-8° C. Arriving > 48 hours after collection, store and send on dry ice.
Causes for Rejection: Specimens submitted on a preservative such as formalin. Specimens that have leaked and possibly contaminated each other in the same packer. Specimens collected with a wood or calcium alginate swab. Specimens received on expired viral transport media. Clinical specimens received at room temperature. Specimens for viral isolation received cold and more than 2 days after collection.	**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-2V	**Specimen Handling:**
Transport Temperature: Transport cold on ice packs within 48 hours of collection. If specimens will not be received at the laboratory within 48 hours of collection, specimens should be frozen and shipped on dry ice.	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

Enterovirus (Culture – Typing)

Test Includes: Immunofluorescence, serum neutralization	
Reporting	
Results Available: 1-4 weeks	**Contact #s:** 512-776-7594
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Erysipeloid (Culture – Isolation)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 7-21 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Erysipeloid (Culture – Identification)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 7-21 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Escherichia coli 0157:H7 Culture (Isolation)

Test Includes: Conventional biochemicals, EHEC toxin testing, PCR.	
Reporting	
Results Available: 5-10 days.	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Escherichia coli 0157:H7 Culture (Identification)

Test Includes: Conventional biochemicals, EHEC toxin testing, PCR.	
Reporting	
Results Available: 5-7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7582
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 776-7582. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Fasciolopsis (Microscopic – Direct Concentration)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 776-7650
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Filariasis (Microscopic – Direct Giemsa Stain)

Test Includes: Microscopic examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Food Poisoning (Culture - Isolation)

Test Includes: BAX, Vidas, Conventional biochemicals	
Reporting	
Results Available: 3-14 days	**Contact #s:** (512) 776-7562
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Giardiasis (Microscopic – Direct Concentration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Gonorrhea Culture (Isolation)

Test Includes: Conventional biochemicals, Accuprobe.	
Reporting	
Results Available: 2-4 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Gonorrhea Culture (Identification)

Test Includes: Conventional biochemicals; susceptibility testing [for epidemiological purposes only]; Beta-lactamase.	
Reporting	
Results Available: 5-7 days	**Contact #s:** (512) 776-7582
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, G-THSTEPS for THSteps Medicaid	**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:** http://www.dshs.state.tx.us/lab/fees.shtm

Gonorrhea (Culture – Genetic Probe)

Test Includes: GEN-PROBE APTIMA COMBO 2® Assay	
Reporting	
Results Available: 2-3 days	**Contact #s:** (512) 458-7657
Reference	
Method: GEN-PROBE APTIMA COMBO 2® Assay	
Turnaround Time: 2-3 days	**Reference Range:** Negative for Neisseria gonorrhoea
Limitations: Results dependent on adequacy of sampling. Refer to package insert of the appropriate GEN-PROBE specimen collection kit. The APTIMA COMBO 2® Assay is not intended for the evaluation of suspected sexual abuse or for other medico-legal indications.	**Interpretation:** Negative results indicate that the patient does not have detectable amounts of N. gonorrhoeae rRNA.
Specimen Requirements	
Specimen Collection: Only specimens collected in APTIMA ®collection kits can be processed for testing. There are three kits we use for our testing; APTIMA® Urine Specimen Collection Kit for Male and Female Urine Specimens APTIMA® Unisex Swab Specimen Collection Kit for Endocervical and Male Urethral Swab Specimens APTIMA® Vaginal Swab Specimens kit	**Sample Type:** Female urine, vaginal and endocervical swab. Male urine and urethral swab.
Volume/Amount Required: Refer to package insert of APTIMA® Specimen Collection Kit for detailed directions.	**Preferred Specimen:** Urine (Male or Female); Female Endocervical Swab; Female Vaginal Swab; Male Urethral Swab
Collection/Preservation: Only swabs contained in the GEN-PROBE® APTIMA®specimen collection kit can be used to collect patient specimens.	**Storage Instructions:** Store at ambient temperature.
Causes for Rejection: Wrong name on collection tube, two swabs in tube, no swab on tube, a cleaning swab or a swab not supplied by GEN-PROBE. Urine level must fall between the two black indicator lines on the tube label.	**Sample Container:** APTIMA® Urine Specimen Collection Kit for Male and Female Urine Specimens,swabs APTIMA® Unisex Swab Specimen Collection Kit for Endocervical and Male Urethral Swab Specimens and APTIMA® Vaginal Swab Specimens
Sample Test Kit: GEN-PROBE APTIMA 2 COMBO Assay	**Availability:** Tested Monday – Friday.

Diagnostic Information: GEN-PROBE APTIMA COMBO 2® Assay 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 urine, vaginal swab, or endocervical swab and male urine and urethral swabs using the appropriate GEN-PROBE® APTIMA®Specimen Collection Kit. Only swabs contained in the GEN-PROBE® APTIMA® specimen collection kit can be used to collect patient specimens.	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** body fluid handled with universal precautions
Transport Temperature: Ambient temperature (2°-30°C)	**Shipping Requirements:** In accordance with federal shipping regulations for diagnostic specimens, noninfectious.
Billing	
CPT Code: 87491	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Haemophilus species Culture –(Identification)

Test Includes: Conventional biochemicals, serotyping	
Reporting	
Results Available: 5-7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Haemophilus species Culture (Typing only)

Test Includes: Serological testing	
Reporting	
Results Available: 5-7 days.	**Contact #s:** (512) 776-7582
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 • •• •• •••••• -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

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

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Herpes Simplex (Culture - Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 1-12 days	**Contact #s:** 512-776-7594
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-2V	**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:** http://www.dshs.state.tx.us/lab/fees.shtm

Herpes Simplex (Culture - Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 1-12 days	**Contact #s:** 512-776-7594
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-2V	**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:** http://www.dshs.state.tx.us/lab/fees.shtm

Histoplasmosis (Culture - Isolation)

Test Includes: Isolation of fungus and identification by Gen-Probe Accuprobe Test	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Histoplasmosis (Culture – Genetic Probe Confirmation)

Test Includes: Identification of isolate by Gen-Probe Accuprobe Test	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-776-7318, 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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, G-THSTEPS for THSteps Medicaid	**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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Hookworm (Microscopic – Direct Wet Smears Concentration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Influenza (Culture – Isolation)

Test Includes: Cell Culture	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-776-7594
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 < 72 hours after collection, store and send at 2-8° C. Arriving > 72 hours after collection, store and send on dry ice.
Causes for Rejection: Specimens submitted on a preservative such as formalin. Influenza Surveillance specimens received cold and more than 3 days after collection. Specimens that have leaked and possibly contaminated each other in the same packer. Specimens collected with a wood or calcium alginate swab. Specimens received on expired viral transport media. Clinical specimens received at room temperature.	**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-2V	**Specimen Handling:**

Transport Temperature: Transport cold on ice packs within 72 hours of collection or freeze at - 70° C and ship on dry ice. Please refer to www.texasflu.org for additional specimen submission criteria.	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252, 87253	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

Influenza (Culture – Typing)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-776-7594
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Isopora species (Microscopic – Direct Wet Smears Concentration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Isopora species (Microscopic – Acid Fast Stain)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Legionellosis Culture (Isolation)

Test Includes: Conventional biochemicals; Direct Immunofluorescent Antibody (DFA) test	
Reporting	
Results Available: 7-21 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Legionellosis Culture (Identification)

Test Includes: Conventional biochemicals; Direct Immunofluorescence Antibody Test (DFA)	
Reporting	
Results Available: 7-14 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Legionellosis Culture (Typing)

Test Includes: Direct Immunofluorescent Antibody Test (DFA)	
Reporting	
Results Available: 7-14 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Leishmaniasis (Culture – Isolation)

Test Includes: Specimens forwarded by TDSHS to CDC with prior arrangement.	
Reporting	
Results Available:	**Contact #s:** 512-776-7560
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 512-776-7560 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 512-776-7560 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Leishmaniasis (Microscopic – H & E Stain)

Test Includes: Microscopic examination	
Reporting	
Results Available: 1 day	**Contact #s: (**512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Leprosy (Microscopic and Animal Studies)

Names of Related Agents: Mycobacterium leprae

Test Includes:	
Reporting	
Results Available:	**Contact #s:** Hansen's Disease Program Coordinator at 512-776-7447
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Listeriosis Culture–(Isolation)

Test Includes: Conventional biochemicals.	
Reporting	
Results Available: 7-21 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Listeriosis Culture –(Identification)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 4-21 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7185
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Loiasis (Microscopic – Direct Giemsa Stains)

Test Includes: Microscopic examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Malaria (Microscopic – Direct Stain Giemsa)

Test Includes: Microscopic examination	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Melioidosis Culture (Isolation) See also Aerobic Bacterial Culture (Isolation)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 7-21 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7582/ 776-7185
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Meningitis, Meningococcal Culture (Isolation)

Test Includes: Conventional biochemicals, Serological typing	
Reporting	
Results Available: Preliminary 1day; Final report 5-10 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Meningitis, Meningococcal Culture (Identification)

Test Includes: Conventional biochemicals, Serological typing	
Reporting	
Results Available: Preliminary 1day; Final report 5-10 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Meningitis, Meningococcal Culture (Grouping)

Test Includes: slide agglutination	
Reporting	
Results Available: Preliminary 1day; Final report 3-5 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Microsporidiosis (Microscopic – Modified Trichrome Stain)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Milk, Quality Check (Culture- SPC)

Test Includes: Standard plate count	
Reporting	
Results Available: 4 days	**Contact #s:** (512) 776-7562
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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
Billing	
CPT Code: none	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7214. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Mosquitoes (Identification only)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** 512-776-7615
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Mosquitoes (Culture – Virus Isolation/Detection and Identification)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** 512-776-7615
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Mumps (Culture - Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-776-7594
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 submitted on a preservative such as formalin. Specimens that have leaked and possibly contaminated each other in the same packer. Specimens collected with a wood or calcium alginate swab. Specimens received on expired viral transport media. Clinical specimens received at room temperature. Specimens for viral isolation received cold and more than 2 days after collection.	**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 < 48 hours after collection, store and send at 2-8° C. Arriving > 48 hours after collection, store and send at on dry ice.
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-2V	**Specimen Handling:**
Transport Temperature: Transport cold on ice packs within 48 hours of collection. If specimens will not be received at the laboratory within 48 hours of collection, specimens should	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.

be frozen and shipped on dry ice.	
Billing	
CPT Code: 87252	**Fees:**

Mumps (Culture - Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 2-14 days	**Contact #s:**512-776-7594
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-2V	**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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586 or 512-776-7318 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 512-776-7342	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586
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 512-776-7342	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586
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 512-776-7342. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586
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 512-776-7342. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Mycobacteriosis (Culture – Susceptibility, Pyrazinamide Only)

Test Includes: Drug susceptibility testing of Mycobacterium tuberculosis complex to pyrazinamide.	
Reporting	
Results Available: 7-28 days	**Contact #s:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Mycobacteriosis (Culture – Isolation - Direct Nucleic Acid Amplification Test (NAAT) for Mycobacterium tuberculosis complex)

Test Includes: Nucleic Acid Amplification Testing of Clinical Specimens for Mycobacterium tuberculosis complex	
Reporting	
Results Available: 48 hours	**Contact #s:** 512-776-7342 or 512-776-7580
Reference	
Method: Cepheid GeneXpert PCR test amplifies and detects DNA of M. tuberculosis complex	
Turnaround Time: 48 hours from specimen receipt in this laboratory. Positive reports are communicated to the specimen submitter on day of testing.	**Reference Range:** Normal value = Negative
Limitations: Specimen must be sputum, induced or expectorated. AFB Smear and Culture always performed concurrently in this laboratory. *A negative test does not mean the patient does not have M. tuberculosis disease. Test results must be confirmed by culture of specimen for the presence of mycobacteria.* **If a processed sputum sediment is submitted for NAAT only, the AFB culture must be in progress at the submitting laboratory site.**	**Interpretation:** A Positive result means that the DNA of the M. tuberculosis complex is detected. A Negative result means that the DNA of the M. tuberculosis complex was not detected. A Negative result does not rule out the possibility of the presence of viable M. tuberculosis complex in the specimen.
Specimen Requirements	
Specimen Collection: Follow the Guidelines for Specimen Collection and Submission: Mycobacteriology (AFB) Collection, Transport, and Storage (http://www.dshs.state.tx.us/lab/myco_guidelines.shtm)	**Sample Type:** Clinical
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Sputum or processed sputum sediment. For all other specimen types, please contact 512-776-7342 or 512-776-7580..
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. Diagnostic specimens should be shipped on cold pack overnight.
Causes for Rejection: Specimen leaked in transit. No identifier on specimen container. No test requested on G-MYCO requisition form.	**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 512-776-7342.

Diagnostic Information: Diagnostic Information: There should be a high clinical suspicion of tuberculosis when ordering this test. NAA testing should be requested if the test results will make a difference to the patient's treatment or if the test results will make a difference to the contact investigation. Patients should not have a laboratory diagnosis of tuberculosis disease already.	
Specimen Submission	
Required Request Form: G-MYCO • For sputum specimens, check test "AFB Smear, Culture and Direct NAAT (Respiratory Diagnostic Specimens Only)" • For processed sputum sediments, check test "Direct NAAT for M. tuberculosis"	**Shipping Requirements:** Follow the Guidelines for Specimen Collection and Submission: Mycobacteriology (AFB) Collection, Transport, and Storage (http://www.dshs.state.tx.us/lab/myco_guidelines.shtm)
Transport Temperature: Cold shipment (not frozen) recommended.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens. Please check with your courier of choice.
Billing	
CPT Code: 87556	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Mycetoma (Culture – Isolation)

Test Includes: Isolation of fungus and identification by morphological tests.	
Reporting	
Results Available: 21-28 days	**Contact #:** 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Mycetoma (Culture – Identification)

Test Includes: Identification of fungus by morphological tests	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 (776-7760). 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Nocardiosis (Culture - Identification)

Test Includes: Various biochemical and physiological tests for identification to species level.	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Paracoccidioidomycosis (Culture - Isolation)

Test Includes: Isolation of fungus and identification by morphological and physiological tests	
Reporting	
Results Available: 28-35 days	**Contact #s:** 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Paracoccidioidomycosis (Culture - Identification)

Test Includes: Identification of fungus by morphological and physiological tests	
Reporting	
Results Available: 21-28 days	**Contact #s:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Parainfluenza (Culture – Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 5-14 days	**Contact #s:** 512-776-7594
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 < 48 hours after collection, store and send at -20° C. Arriving > 48 hours after collection, store and send on dry ice.
Causes for Rejection: Specimens submitted on a preservative such as formalin. Specimens that have leaked and possibly contaminated each other in the same packer. Specimens collected with a wood or calcium alginate swab. Specimens received on expired viral transport media. Clinical specimens received at room temperature. Specimens for viral isolation received cold and more than 2 days after collection.	**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-2V	**Specimen Handling:**

Transport Temperature: Transport cold on ice packs within 48 hours of collection. If specimens will not be received at the laboratory within 48 hours of collection, specimens should be frozen and shipped on dry ice.	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

Parainfluenza (Culture – Typing)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 5-14 days	**Contact #s:** 512-776-7594
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Penicilliosis (Culture - Isolation)

Test Includes: Isolation of fungus and identification by morphological tests	
Reporting	
Results Available: 14-21 days	**Contact #s:** 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Penicilliosis (Culture - Identification)

Test Includes: Identification of fungus by morphological tests	
Reporting	
Results Available: 7-10 days	**Contact #s:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Pertussis Culture (Identification)

Test Includes: Conventional Biochemicals, PCR	
Reporting	
Results Available: Preliminary	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Pinworm See also Enterobiasis

Test Includes: Microscopic Examination	
Reporting	
Results Available: 3 days	**Contact #s**: (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 (512-776-7582) 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 (512-776-7582) 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Primary Amebic Meningoencephalitis Envirnmental (Culture - Isolation)

Test Includes: Culture, microscopic examination, transformation study	
Reporting	
Results Available: 10 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Primary Amebic Meningoencephalitis (Culture - Identification)

Test Includes:	
Reporting	
Results Available: 1 day for direct exam; up to 10 days for culture.	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Rabies (Microscopic – Direct Fluorescent Antibody)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** 512-776-7595
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Red Tide Analysis See also Brevitoxin (Culture – Toxin Detection)

Test Includes: Small animal inoculation	
Reporting	
Results Available: 1 day	**Contact #s:** (512) 776-7562
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Respiratory Syncytial Virus (Culture – Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-776-7594
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. Specimens for RSV received cold and more than 2 days after collection. Specimens that have leaked and possibly contaminated each other in the same packer. Specimens collected with a wood or calcium alginate swab. Specimens received on expired viral transport media. Clinical specimens received at room temperature.	**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-2V	**Specimen Handling:**
Transport Temperature: Transport cold on	**Shipping Requirements:** Ship specimens in

ice packs within 48 hours of collection.	compliance with governmental regulations.
Billing	
CPT Code: 87252	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

Respiratory Syncytial Virus (Culture – Identification)

Test Includes: Immunofluoresence	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-776-7594
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-2V	**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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

Rotavirus (Microscopic – Electron Microscopy)

Test Includes: Electron Microscopy	
Reporting	
Results Available: 1-2 days	**Contact #s:** 512-776-7594
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

Rubella (Culture – Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 7-21 days	**Contact #s:** 512-776-7594
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 48 hours after collection, store and send at 2-8° C. Arriving > 48 hours after collection, store and send at on dry ice.
Causes for Rejection: Specimens submitted on a preservative such as formalin. Specimens that have leaked and possibly contaminated each other in the same packer. Specimens collected with a wood or calcium alginate swab. Specimens received on expired viral transport media. Clinical specimens received at room temperature. Specimens for viral isolation received cold and more than 2 days after collection.	**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-2V	**Specimen Handling:**
Transport Temperature: Transport cold on ice packs within 48 hours of collection. If specimens will not be received at the laboratory within 48 hours of collection, specimens should be frozen and shipped on dry ice.	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

Rubella (Culture – Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 7-21 days	**Contact #s:** 512-776-7594
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-2V	**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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

Rubeola (Measles) (Culture – Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 5-21 days	**Contact #s:** 512-776-7594
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 < 48 hours after collection, store and send at 2-8° C. Arriving > 48 hours after collection, store and send at on dry ice.
Causes for Rejection: Specimens submitted on a preservative such as formalin. Specimens that have leaked and possibly contaminated each other in the same packer. Specimens collected with a wood or calcium alginate swab. Specimens received on expired viral transport media. Clinical specimens received at room temperature. Specimens for viral isolation received cold and more than 2 days after collection.	**Sample Container:** Sterile container
Sample Test Kit:	**Availability:** Monday - Friday
Diagnostic Information: 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-2V	**Specimen Handling:**

Transport Temperature: Transport cold on ice packs within 48 hours of collection. If specimens will not be received at the laboratory within 48 hours of collection, specimens should be frozen and shipped on dry ice.	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 86752	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

Rubeola (Measles) (Culture – Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 10-14 days	**Contact #s:** 512-776-7594
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-2V	**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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

Salmonellosis Culture –(Isolation)

Test Includes: Conventional biochemicals, serological typing	
Reporting	
Results Available: 4-7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Salmonellosis Culture–(Identification)

Test Includes: Conventional biochemicals, serological typing	
Reporting	
Results Available: 4-7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Salmonellosis Culture –(Typing)

Test Includes: serological typing	
Reporting	
Results Available: 7-14 days	**Contact #s:** (512) 776-7185
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Schistosomiasis (Microscopic – Direct Concentration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Schistosomiasis (Microscopic – Urine Filtration)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Shigellosis Culture (Isolation)

Test Includes: Conventional biochemicals, serological typing	
Reporting	
Results Available: 3-10 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Shigellosis Culture (Identification)

Test Includes: Conventional Biochemicals, Serological typing.	
Reporting	
Results Available: 3-10 days	**Contact #s:** (512) 776-7185
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Sporotrichosis (Culture – Isolation)

Test Includes: Isolation of fungus and identification by morphological and physiological tests	
Reporting	
Results Available: 14-21 days	**Contact #s:** 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Sporotrichosis (Culture – Identification)

Test Includes: Identification of fungus to species level by morphological and physiological tests	
Reporting	
Results Available: 14-21 days	**Contact #s:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

Staphylococcus (Culture – Identification)

Test Includes: Conventional biochemicals, API Staph	
Reporting	
Results Available: 5-7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Staphylococcus (Culture – TSST-1 testing)

Test Includes: TSST-1 toxin assay	
Reporting	
Results Available: 1-2 days	**Contact #s:** (512) 776-7582
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) 776-7582 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Staphylococcus Culture (Isolation)

Test Includes: Conventional biochemicals, API Staph	
Reporting	
Results Available: 3-7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Staphylococcus (Culture – Enterotoxin testing)

Test Includes: Enterotoxin testing	
Reporting	
Results Available: 2-4 days	**Contact #s:** (512) 776-7562
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Strep Screen (Group B only)

Test Includes: Group B Strep Isolation, Identification	
Reporting	
Results Available: 4-10 days	**Contact #s:** (512) 776-7657
Reference	
Method: Bacterial culture, routine isolation and identification	
Turnaround Time: 4-10 days	**Reference Range:** *No group B streptococci isolated.*
Limitations: Specimen should be taken prior to antimicrobial therapy. Organisms must be viable for culture studies.	**Interpretation:** Negative results indicate that the patient does not have detectable amounts group B streptococci.
Specimen Requirements	
Specimen Collection: Prepartum patients: Collect specimen at 35-37 weeks gestation. The optimum specimen for this test is a vaginal/rectal swab. Results may be compromised if only a vaginal swab is submitted. A single swab or two separate swabs may be used. Non Pregnant patients: Collect specimen with swab.	**Sample Type:** Prepartum patients: Vaginal/rectal swab Other patients: Swab
Volume/Amount Required: One (1) swab	**Preferred Specimen:** Prepartum patients:Vaginal/rectal swab Non Pregnant patients: Swab
Collection/Preservation: Amies or Stuarts's media Note: if two separate swabs are used submit both in same transport tube.	**Storage Instructions:** Store at 4°C to 25°C
Causes for Rejection: Swabs > 4 days old, Swabs not on transport media, Expired transport device, received frozen, viral transport device, DNA probe transport device, Urine specimen or swab.	**Sample Container:** Aimes or Stuart's transport media
Sample Test Kit: NA	**Availability:** Tested Monday – Friday
Diagnostic Information:	
Specimen Submission	
Required Request Form: G-2B	**Specimen Handling:** Body fluid handled with universal precautions
Transport Temperature: Ambient temperature	**Shipping Requirements:** In accordance with

(4°-25°C)	federal shipping regulations for diagnostic specimens
Billing	
CPT Code: 87077	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Strongyloidiasis (Microscopic – Direct)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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, G-THSTEPS for THSteps Medicaid	**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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Syphilis (Serological – Venereal Disease Research Laboratory)

Test Includes: Slide agglutination	
Reporting	
Results Available: 3-5 days	**Contact #s: 512-776-7578**
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Taeniasis (Microscopic – Direct Concentration Clearing)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Tapeworm, Other Diphyllobothrium latum, Hymenolepis nana, Hymenolepis diminuta
(Microscopic – Clearing Exam)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Tetanus (Culture – Toxin Selection)

See also Anaerobic Bacterial Toxin Detection (Identification)

Test Includes: Toxin studies	
Reporting	
Results Available: 3-7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

Toxoplasmosis (Microscopic – Giemsa Stain)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Trichuriasis (Microscopic – Direct Concentration Exam ID)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Trypanosomiasis (Culture)

Test Includes: Microscopic examination	
Reporting	
Results Available: 1-3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Trypanosomiasis (Microscopic – Direct Giemsa stained)

Test Includes: Microscopic examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586 or 512-776-7318 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 512-776-7342.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586
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 512-776-7342	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Tuberculosis (Culture – Susceptibility, Pyrazinamide Only)

Test Includes: Drug susceptibility testing of Mycobacterium tuberculosis complex to pyrazinamide.	
Reporting	
Results Available: 7-28 days	**Contact #s:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Tuberculosis (Culture – Isolation - Direct Nucleic Acid Amplification Test (NAAT) for Mycobacterium tuberculosis complex)

Test Includes: Nucleic Acid Amplification Testing of Clinical Specimens for Mycobacterium tuberculosis complex	
Reporting	
Results Available: 48 hours	**Contact #s:** 512-776-7342 or 512-776-7580
Reference	
Method: Cepheid GeneXpert PCR test amplifies and detects DNA of M. tuberculosis complex	
Turnaround Time: 48 hours from specimen receipt in this laboratory. Positive reports are communicated to the specimen submitter on day of testing.	**Reference Range:** Normal value = Negative
Limitations: Specimen must be sputum, induced or expectorated. AFB Smear and Culture always performed concurrently at this laboratory. A negative test does not mean the patient does not have M. tuberculosis disease. Test results must be confirmed by culture of specimen for the presence of mycobacteria. **If a processed sputum sediment is submitted for NAAT only, the AFB culture must be in progress at the submitting laboratory site.**	**Interpretation:** A Positive result means that the DNA of the M. tuberculosis complex is detected. A Negative result means that the DNA of the M. tuberculosis complex was not detected. A Negative result does not rule out the possibility of the presence of viable M. tuberculosis complex in the specimen.
Specimen Requirements	
Specimen Collection: Follow the Guidelines for Specimen Collection and Submission: Mycobacteriology (AFB) Collection, Transport, and Storage (http://www.dshs.state.tx.us/lab/myco_guidelines.shtm).	**Sample Type:** Clinical
Volume/Amount Required: 3 mL to 15 mL	**Preferred Specimen:** Sputum or processed sputum sediment. For all other specimen types, please contact 512-776-7342 or 512-776-7580.
Collection/Preservation: No preservative	**Storage Instructions:** Transport specimen as soon as possible. Diagnostic specimens should be shipped on cold pack overnight.
Causes for Rejection: Specimen leaked in transit. No identifier on specimen container. No test requested on G-MYCO requisition form.	**Sample Container:** Triple contained. Sterile, leak-proof, 50 mL conical tube preferred for primary container.
Sample Test Kit:	**Availability:** Monday through Friday

Diagnostic Information: There should be a high clinical suspicion of tuberculosis when ordering this test. NAA testing should be requested if the test results will make a difference to the patient's treatment or if the test results will make a difference to the contact investigation. Patients should not have a laboratory diagnosis of tuberculosis disease already.	
Specimen Submission	
Required Request Form: G-MYCO • For sputum specimens, check test "AFB Smear, Culture and Direct NAAT (Respiratory Diagnostic Specimens Only)" • For processed sputum sediments, check test "Direct NAAT for M. tuberculosis"	**Specimen Handling:** Follow the Guidelines for Specimen Collection and Submission: Mycobacteriology (AFB) Collection, Transport, and Storage (http://www.dshs.state.tx.us/lab/myco_guidelines.shtm).
Transport Temperature: Cold shipment (not frozen) recommended.	**Shipping Requirements:** Triple-contained and packaged to meet requirements of DOT, USPS, PHS, and IATA for shipping of clinical specimens. Please check with your courier.
Billing	
CPT Code: 87556	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Tuberculosis (Culture – DNA Fingerprinting)

Test Includes:	
Reporting	
Results Available: approx. 10 business days	**Contact #s:** 512-776-7342 or 512-776-7580
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 512-776-7342.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Varicella (Culture – Isolation)

Test Includes: Cell culture	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-776-7594
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:** Arriving <12 hours after collection, store and send at 2-8° C. Arriving >12 hours after collection, store and send on dry ice.
Causes for Rejection: Specimens submitted on a preservative such as formalin. Specimens for varicella zoster isolation received cold and more than 12 hours after collection. Specimens that have leaked and possibly contaminated each other in the same packer. Specimens collected with a wood or calcium alginate swab. Specimens received on expired viral transport media. Clinical specimens received at room temperature.	**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 2-4 day incubation of the shell vial culture, immunofluorescence tests are performed using VZ-specific monoclonal antibody.	
Specimen Submission	
Required Request Form: G-2V	**Specimen Handling:**

Transport Temperature: Transport cold on ice packs within 12 hours of collection. Specimens that will not be received within 12 hours of collection should be frozen and shipped on dry ice.	**Shipping Requirements:** Ship specimens in compliance with governmental regulations.
Billing	
CPT Code: 87252	**Fees:** http://www.dshs.state.tx.us/lab/fees.shtm

Varicella (Culture – Identification)

Test Includes: Immunofluorescence	
Reporting	
Results Available: 2-14 days	**Contact #s:** 512-776-7594
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-2V	**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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

Vibrio parahaemolyticus and other Vibrio species (Culture – Identification)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 4-7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Vibrio cholerae, (Culture – Identification)

Test Includes: Conventional biochemicals, serological typing	
Reporting	
Results Available: 4-7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Vibrio cholerae and other Vibrio species (Isolation)

Test Includes: conventional biochemicals, serological typing	
Reporting	
Results Available: 3-7 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** http://www.dshs.state.tx.us/lab/fees.shtm

Water Testing, Cryptosporidia & Giardia MPA (Micro particulate analysis (Microscopic – Direct Exam IFA)

Test Includes:	
Reporting	
Results Available:	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 • •• •• •• • • • • -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:** http://www.dshs.state.tx.us/lab/fees.shtm

Worm, Miscellaneous Identification (Microscopic – Direct Concentration)

Test Includes: Microscopic Examination	
Reporting	
Results Available: 3 days	**Contact #s:** (512) 776-7560
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

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 (512-776-7582) 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Yersinia enterocolitica (Culture – Isolation)

Test Includes: Conventional biochemicals	
Reporting	
Results Available: 4-14 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

Yersinia enterocolitica (Culture – Identification)

Test Includes: conventional biochemicals	
Reporting	
Results Available: 4-10 days	**Contact #s:** (512) 776-7582
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7455 for prior approval Technical questions: 512-776-7586
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 512-776-7455.	
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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:** 512-776-7586
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:** http://www.dshs.state.tx.us/lab/fees.shtm

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) 776-7760. 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:** http://www.dshs.state.tx.us/lab/fees.shtm

Laboratory Testing Services Manual

DSHS Laboratory Services Section

Date of latest update: 10/25/2016

Revision Record

Date	Description
10/16	Updated the Austin and STL Fee Schedule List, Updated MPS0006A to MPS0010A

Laboratory Testing Services Manual

DSHS Laboratory Services Section

Date of latest update: 10/25/2016

Revision Record	
Date	**Description**
09/01/14	Updated the Laboratory Fee Schedule. Changed name from Manual of Reference Services to Laboratory Testing Services Manual.
08/28/14	Posted the 2014 Holiday Schedule under Specimen Receiving, Lab Hours, Holidays.
03/24/14	Changed Results Available from "3-4 working days after receipt of specimen" to "4-7 working days after receipt of specimen" for the following: • Newborn Screening Panel
03/05/14	Changed Results Available from "2-3 working days after receipt of specimen" to "4-5 working days after receipt of specimen" for the following: • Blood Lead • Cholesterol/Lipid Profile • Diabetes/Glucose • Total Hemoglobin
02/20/14	Updated Mycobacteriosis (Culture - Isolation-Direct Nucleic Acid Amplification Test (NAAT) for Mycobacterium tuberculosis complex) and Tuberculosis (Culture - Isolation - Direct Nucleic Acid Amplification Test (NAAT) for Mycobacterium tuberculosis complex).
01/23/14	Updated Newborn Screening specimen collection requirements.
11/18/13	Removed Adenovirus (Culture - Typing) test no longer offered. Updated form name to G-2V (previously G-2A) for Adenovirus, Enterovirus, Herpes Simplex, Influenza, Mumps, Parainfluenza, Respiratory Syncytial Virus, Rubella, Rubeola and Varicella.
09/10/13	Removed Parasitology tests no longer offered: Chagas' Disease (Culture - Isolation), Chagas' Disease (Identification). Triatomine bugs are forwarded by Zoonosis Control to the CDC or TAMU.
08/30/13	Updated the Laboratory Fee Schedule.
08/28/13	Updated Specimen Receiving, Lab Hours, Holidays to include FY2014 Holiday Schedule.
08/26/13	Added new test request forms.

08/19/13	Updated Blood Lead, Cholesterol/Lipid Profile, Diabetes/Glucose, and Total Hemoglobin. Removed tests no longer offered: Blood Type/Rh Factor/Antibody Screen and ID, RPR Card Test, and Triple Screen Testing.
06/06/13	Removed Arbovirus tests no longer offered: Insect Identification and Mosquitoes, Larvae (Microscopic Identification)
02/27/13	Added Strep Screen (Group B only) testing information.
01/28/13	Updated Laboratory Contact Information.
12/19/12	Updated Clinical Chemistry information in the Guidelines for Specimen Shipping and Mailing.
11/29/12	Updated information for Newborn Screening Tests.
10/15/12	Revised testing information for Chlamydia and Gonorrhea using Gen-Probe Aptima Combo Assay.
10/12/12	Updated the Laboratory Fee Schedule.
09/04/12	Updated Specimen Receiving, Lab Hours, Holidays to include FY2013 Holiday Schedule.
06/22/12	Revised Specimen Receiving, Lab Hours, Holidays to reflect that after hours receipt of specimens is temporararily unavailable.
01/25/12	Updated Laboratory Contact Information.